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ABSTRACT

A session-by-session plan for a series of after-school Career Path workshops for 11th grade women students is outlined. Designed as a cooperative effort of community colleges and high schools, the objective of the workshops is to increase the number of women entering nontraditional technical and professional careers by providing (1) occupational/educational information and opportunity to plan for a career, and (2) supplementary instruction in math and science skills necessary for many nontraditional careers. The 11-session program leads participants to explore the following: personal accomplishments and skills, values and skills important to occupational choice, fear of mathematics and the myths contributing to that fear, approaches to solving math problems, nontraditional career options for women, sources of occupational information and the requirements for various occupational alternatives, educational requirements and options for a specific career choice, college admission and financial aid, career and lifestyle options, career decision-making, and "career pathing" (steps to accomplish goals). For each session, objectives, strategies, content, and resources are described. The math-science supplemental component consists of five modules introducing calculus, statistics, scientific processes, computers, and providing preparation for the Scholastic Aptitude Test. It is noted that the workshop design and content have not been field tested. (MB)

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A PLANNING PROGRAM TO DEVELOP CAREER PATH WORKSHOPS FOR WOMEN STUDENTS

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in cooperation with the
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FOREWORD

Recent trends in our culture involving recognition of equal rights for all and, particularly, women and minorities in the work world, serve to provide the opportunity for equitable access to jobs. Opportunity alone, however, will not readily overcome the years of cultural bias and mind-set which characterizes choice of male- and female-dominant occupations. The factors affecting occupational decision-making, stemming as they do from attitudes developed in home, social, and other settings, require intensive re-education to effect the goal of non-stereotypical occupational choice and the election of training to prepare for such entry.

Accordingly, the Institute for Research and Development in Occupational Education (IRDOE) developed a proposal for a planning grant to encourage women high school juniors and seniors to consider non-traditional scientific and technological careers. The articulated efforts of community college, high school, and IRDOE staff evolved a plan for a two-pronged approach, reported herein. It consists of a workshop series to provide participants with occupational/educational information and an opportunity to plan for a career, and supplementary instruction in math and science skills necessary for many non-traditional careers.

Implementation of the plan, expected in September 1978, should yield additional information to insure an exemplary program. Correspondence from readers regarding these contents would be most welcome.

Lee Cohen, Ph.D.
Professor, Director

ACKNOWLEDGMENTS

This project truly represents the team efforts of Ms. Lore Jarmul, Assistant to the Dean, Queensborough Community College; Ms. Helga Schwartz and Ms. Sondra Farber, Department of Mathematics, Queensborough Community College; Mr. Robert Schnabel, College Advisor, John Bowne High School; Ms. Anita Silver, Chair, Physical Sciences Department, Benjamin N. Cardozo High School; and Mr. Jeffrey Spielvogel, Counselor, Francis Lewis High School.

We are grateful to the administration of these institutions for their interest and involvement and would like to thank Dean Irving Slade, Student Services, Queensborough Community College and the principals of John Bowne, Benjamin N. Cardozo, and Francis Lewis High Schools--Mr. Bernard Ludwig, Mr. Ben Michelson, and Mr. Melvin Serisky and Ms. Bernice Carson, Assistant Principal. We are also indebted to other staff and faculty at these schools for their help and encouragement.

In addition to the task force consultants and the institutions they represent so ably, several others contributed substantively to this project. We would like to acknowledge the work of Dr. Stanley Kogelman of Mind Over Math, as well as the participation of many faculty members from the City University of New York and other people from outside the University system who believed in the need for this program.

The work of IRDOE's staff is reflected in the content of this document. We particularly wish to express our appreciation to Ms. Carol Sullivan for her valuable input and creative suggestions. As is usual, Dr. Lee Cohen provided important guidance, and Mr. Russell Nutter and Ms. Melanie Bentley, support.

Barbara R. Heller, Project Director
Victor D'Lugin
Linda Gross

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A PLANNING PROPOSAL TO DEVELOP CAREER PATH WORKSHOPS FOR WOMEN STUDENTS

On January 16, 1978 the Grants Administration Unit of the New York State Education Department notified IRDOE (Institute for Research and Development in Occupational Education, part of the City University of New York Graduate School and University Center, Center for Advanced Study in Education) that they had approved our proposal submitted under the Vocational Education Amendments of 1976.[1]

The proposal was for planning a two-component workshop program for women students graduating from high school who are intending to pursue an education at a local two-year or four-year college of the City University of New York (CUNY). Predicated on the assumption that the future plans of female seniors, similar to their male counterparts, are based on limited knowledge and exposure to a wide range of careers and that women students suffer, in addition, self- and other-imposed occupational stereotypes, IRDOE felt a focused effort was needed to provide special supports to address these problems. The Career Paths Workshop program seeks to respond to these needs.

PROJECT GOALS

The long-range goal of the Career Paths program is to increase the number of women entering non-traditional technical and professional occupations. By non-traditional, we mean those occupations in which women workers are underrepresented. The short-range goal of this eight-month planning proposal[2] was to design the elements of a total program--the content and strategies, personnel and materials, and administrative procedures--for implementation in the 1978-79 school year. The specific objectives for this year reflect the planning intent of the grant.

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[1] VEA #78-3D-807

[2] This proposal was funded from January 1-August 31, 1978.

Background and Need

The last complete census (1970) reported a total of 76.8 million people, 16 years and older, employed in the United States. At that time, women accounted for approximately 40 percent of this total labor force,[1] but were poorly represented in several occupational categories, including those with the fastest projected rate of growth and most favorable employment outlooks. Moreover, the attention being paid in recent years to reducing occupational stereotyping by sex has not (yet) been reflected in any large increase in the number of female postsecondary students enrolling in fields of study that lead to those careers.

Various reasons have been advanced to explain the relatively small percentage of females in the scientific and engineering technologies, in some sciences, and in certain business and communications occupations. In one or another guise, the explanations center around the absence of role models, and the belief that these occupations are too masculine--too "logical" (i.e., mathematical) and too "difficult" (i.e., scientific)--for women. The cumulative effects, educationally, is that without direct support, beginning at about the 10th or 11th grade of high school female students take progressively fewer mathematics courses than do males. This phenomenon has been called the "math filter" problem. As a result of it, when women students enroll in college they are more poorly prepared in those background courses needed to enter and compete in technological and scientific courses of study.

The focus of the Career Paths program is to expand the abilities and occupational horizons of women students by identifying females graduating from secondary school as a "special needs" group; establishing a supportive and adult environment; providing occupational information at a time that allows the student to seek or obtain help; and attending to women's unique concerns via counseling, peer instruction, and role models.

As IRDOE envisioned such a program at the outset, Career Paths would consist of two components: the first component to be a series of after-school workshops, conducted on a community college campus, serving the needs of women students about to be graduated from selected local

[1] Currently, women account for approximately half or more of the labor force.

high schools. All students would be encouraged to attend all workshop sessions, and inducements would be built in. The workshops would provide students with occupational information and explore those aspects of the self and the external world crucial to informed career decision-making.

The second component as we conceived it initially, was called "supplementary instruction," and would consist of varied math- and science-related activities that would be offered to the workshop participants as an optional "extra." The activities would be designed to accord with students' expressed needs in these areas, and might consist of such things as individual tutorial instruction in algebra-trigonometry, pre-calculus, and/or math and science in everyday life. The activities would be flexible in length, and might differ in how formal (i.e., how course-like) they are, where (high school or college campus) they would take place, and who would conduct them (school faculty, peer tutors).

Objectives

The specific objectives for the planning grant period were designed to result in the production of Career Paths program design. They include the following:

- Convening task forces, composed of representatives from educational institutions of various levels (see below), to plan the counseling-based workshop and the math and science supplementary instructional components, and to obtain necessary administrative clearances.
- Establishing criteria for the selection of participating secondary and postsecondary schools, as well as criteria for identifying a pilot group of students.
- Defining a session-by-session format, including the session's objectives, the personnel and materials resources, and student activities.
- Formulating a range of supplementary modes for providing mathematics and science instruction.
- Specifying evaluative criteria and designing instruments and other techniques to assess the progress and impact of the first-year implementation.
- Submitting a complete plan to the State Education Department for consideration for implementation in September 1978.

An integral aspect of this year's grant was the early involvement of the schools that would be participants in the first field demonstration. Representatives from secondary and postsecondary institutions would be invited to serve as the task force members, with responsibility for

developing program content and acting as liaison with their school administration and students. This kind of involvement would be advantageous in that the program content would reflect the input of those most knowledgeable about the target population. Moreover, it was anticipated that all participants would closely identify with the final plan, thus assuring smoother implementation in 1978-79.

PROCEDURES

As we defined them, IRDOE's responsibilities would be both organizational and substantive. Project staff would select the site schools, arrange the task forces, and monitor all meetings. In addition, we were prepared to type, duplicate materials, and otherwise facilitate the work of the task forces. On a content level, IRDOE would prepare guidelines from which the task forces could work, do any background research (e.g., compile lists of speaker's bureaus) necessary, and coordinate (unify) what the task force representatives--individually and as groups--produced.

Selection of a Community College

The choice of a cooperating community college was an important decision since, by design, it would be the pivotal site through which IRDOE would articulate with feeder high schools and representatives from a senior college. In January, IRDOE staff established criteria for working with a community college and examined the possibilities within the CUNY system. Four colleges were tentatively considered, and in mid-February we contacted Queensborough Community College and arranged a meeting for early March. At that time we introduced the concept to the Dean and Assistant to the Dean of Students, the Director of Counseling, and several counselors with responsibilities and experience with funded projects. At the conclusion of this meeting, IRDOE and Queensborough Community College agreed to work together. The Assistant to the Dean of Student Services would be the liaison, and also a member of a task force. As a group, we began to identify feeder high schools that were geographically accessible and that had a student body that could benefit from the program. Subsequent to the first meeting, the Dean of Students contacted the chairwoman of the college's mathematics department who expressed interest in the project; thus, the nucleus of the task force

that would develop the supplementary instructional component was formed.

IRDOE held a second meeting in mid-March which was attended by the Assistant to the Dean and the mathematics chairwoman. As a direct result of the mid-March meeting, three high schools were selected, the composition of the task forces modified, future relationships with four-year colleges reexamined, and a draft of the Task Force Guidelines prepared. (See Appendix A for these Guidelines, dated 2/78).

The consensus of opinion was that, at least for the current year's activity, a formal relationship with a senior college would be premature: first, it would mean another educational institution with which to coordinate; second, the kind of input needed to meet our objectives--at least for the guidance-based workshop component--was not available at the local CUNY four-year college which no longer had any staff counselors; and finally, women students interested in non-traditional curricula would not necessarily attend the neighboring CUNY four-year college. We decided, however, that student peer leaders (role models) or tutors would be drawn from Queens College (the CUNY companion college), and the New York Institute of Technology and Adelphi University which also enroll a large number of Queensborough Community College transfer students as well as graduates from Queens County District 26 high schools.

Selection of Feeder High Schools

John Bowne, Benjamin N. Cardozo, and Francis Lewis High Schools were invited to participate in the planning phase and in the proposed demonstration. These three schools represent a high, but fairly wide range of academic ability; serve students of diverse ethnic and socioeconomic backgrounds; and have a past history of effective involvement in innovative ventures. IRDOE staff met with each principal at the beginning of March to describe the Career Paths project and to elicit the school's cooperation--specifically, the commitment of a staff member who had the time to devote to task force activities.[1] Each high school principal selected one person on his faculty--a male guidance counselor, a male college advisor, and a female chairperson of the Physical Sciences Department--to work with us.

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[1] To some extent these people were available during the school day, principals approving the time as valuable to the school; most work was done, however, after regular school hours.

Formation of Task Forces

The interests and expertise of the people comprising the task forces defined the directions and responsibilities of the groups. By April, when we convened a general meeting of the people who would be involved in the planning, IRDOE had a detailed Scope of Work for Task Force 1, which was the Career Paths Workshop Component; Task Force 2, the Supplemental Instructional Component; and for Task Force 3, Administration. (See Appendix A for the Scope of Work, dated 3/78.)

Task Force 1 was made up of the Assistant to the Dean of Students at Queensborough Community College, and the representatives from John Bowne and Francis Lewis High Schools. The mathematics department chairwoman, a mathematics faculty person at Queensborough Community College, and the representative from Benjamin N. Cardozo High School comprised Task Force 2. These six people with input from their schools' administrations, had responsibility for resolving the organizational issues apportioned to Task Force 3.

IRDOE staff people worked closely with both groups, as well as with individual representatives. We also provided resource materials, references, and support services. Although Task Forces 1 and 2 decided to proceed differently, in general each task force met together several times, worked individually, and met with IRDOE staff. The meetings took place at each of the high schools, at the college, in IRDOE's offices, and at people's homes. By and large the task force approach to program development was productive. After some initial hesitation, the members worked cooperatively and began to enjoy--look forward to--meeting with one another. More importantly, perhaps, each representative actively publicized[1] the proposed demontration project at his/her school, and enlisted the aid and interest of other staff and students. All expressed hope that they would play a role in the implementation phase, specifically in the conduct of the program.

In mid-July, a first draft of the program was complete--a detailed outline, lists of resources, student activities, and leaders' guides were available. Several additional weeks were spent revising and expanding these materials.

[1] For copies of newspaper articles and handouts, see Appendix A.

CAREER PATH WORKSHOP DESIGN

Prior to describing the detailed Career Path Workshop plan, we will summarize in greater detail its philosophy and the decisions (and some of the progress toward implementation) that were made.

Target Population

Lengthy discussion, with both task force representatives and other professionals knowledgeable about the high school-aged population, raised questions concerning the advisability of working with female high school seniors. Twelfth grade students, male or female, are not only reluctant to engage in after-school activities but, moreover, cannot be induced to consider them: by September of the senior year they have enrolled in those courses that are necessary for college admission, have taken the requisite entrance examinations (e.g., SAT's), and are well into the process of applying to colleges. Furthermore, they work after school or, if not, are busily engaged in important social activities. They are of the opinion, as it has been described to us, that "it's [i.e., high school] all over."

Both task forces agreed that a Career Paths program would profit students entering the eleventh grade in September 1978. Such students are likely to be interested and thus, more likely to attend after-school workshops and they would have an additional year in which to consider taking courses or engaging in other college- or work-related activities. Thus, the first demonstration would be for an 11th grade population.

It would include approximately 30 participants, ten from each of the high schools involved in the planning phase. Criteria were established for identifying a pool of potential students from which participants would be selected and these also served to focus the program. The criteria were designed to exclude students already doing (or intending to do) very advanced work in math/science and, at the same time, increase the diversity of participants. Students selected for participation in the Career Paths program must:

- be on grade level (using the most recent PSEN scores) in math and reading;
- have current course grades of 75 or above;
- have completed 10th grade biology and geometry (or a 10th grade math equivalent);
- be enrolled in Regents classes; and/or in Honors classes provided they are not functioning at Honors levels.

A two-page application form was designed, and pretested with students from each high school.[1] The responses tell us important things about the interests of this population--information that added confirmation to the need for a two-pronged Career Paths program and to the need to refocus its content to better accord with the level of maturity of the population.

Respondents were asked, for example, to indicate their current grade average in math and science (Question 4) and to list two courses (or subjects) that have given them the most problems or anxiety (Question 3). Almost every student listed a math course, and approximately half included a science course as well. Several students listed both math and science. Of the total of 82 "problem" courses, 41.5 percent were mathematics and 24.4 percent were a science. The remainder included, in order of frequency, foreign languages, English, history, and social studies. These findings underscore the belief that upper level high school females are experiencing problems with math and science, although it is not reflected in their current grades in these subjects. The math filter hypothesis suggests instead that their anxieties will be reflected in the future, in decreasing enrollment in these courses.

Students' responses to what topics they would be interested in discussing (Question 9) follow. (The numbers in parentheses are the proportion of students who indicated an interest.) "What you can do to get into college" was the topic selected by most of the students (93%). It was followed by three equally important topics: financing your education; what a career means in terms of education, advancement, salary, and job openings; and how much and what kind of math and science is needed for various careers (86%).

Next, in decreasing order of frequency, were: what high school subjects to take if you're interested in a specific career (80%); advantages of women entering careers where not many women are working (66%); how other women decide on a college major (59%); and what high school subjects to take if you're not certain about your future goals (41%). The three least popular topics were: is it necessary to

[1] See Appendix A. The 44 respondents were current 10th grade females who would be in the 11th grade in 1978-79.

choose between mariage and career (27%); how other female students feel about math and science (23%); and is it necessary to choose between having children and a career (14%).

When counselors visited classes to distribute the hand-outs and invite students to complete an application form they reported high levels of interest until the point at which they told the class that the program was "only for women." As they described it, "at first students of both sexes were interested; then, the young men put down their hands and, after glancing around the room, so did the young women." The females who wanted to participate were contacted individually or individually sought out the counselor for an application.

Junior and senior high school females are reactive to peer pressure, and when in situations with male peers tend typically to "take a back seat." Moreover, they perceive little future conflict between career and home-family primarily because they have yet to appreciate the fact that most will continue to be in the labor force after marriage. Their overriding focus is on the immediate future--postsecondary education--and their need for concrete, realistic career information. These factors led the planners to de-emphasize "women's lifestyles" and stress the students' more immediate concerns.

Program Format

Two demonstration program cycles are planned for 1978-79. Optimally, the first cycle (Cycle 1) would begin in late September-early October and extend to the Christmas recess; the second cycle would commence after the start of the Spring semester and would be completed by late Spring. The period between cycles would be used to modify the program on the basis of the first cycle results. Should these prove minor, the second cycle would be conducted with two groups--one of 11th and one of 12th graders. Following is the calendar for the first cycle of eleven sessions. There are nine Thursday sessions and two sessions on Saturdays.

Session #	Title	Date
1	Past Accomplishments	Thursday, October 5
2	Value & Skills in Occupational Choice	Thursday, October 12
3	Mind Over Math	Thursday, October 19
4	Mind Over Math	Thursday, October 26
5	Career Exploration Field Trip	Thursday, November 2
6	Career Information	Thursday, November 9

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Session #	Title	Date
7	Educational Awareness	Thursday, November 16
(Note: There is no session on November 23 due to the Thanksgiving holiday)		
8	College Admission and Financial Aid	Thursday, November 30
9	Career and Lifestyle Options	Saturday, December 2
10	Decision Making	Thursday, December 7
11	Career Pathing	Saturday, December 9

Supplementary Instructional Component

As the conceptualization of the program goals and the target population became better defined, the relationship between the workshop component (with its counseling emphasis) and the second, supplementary instructional component underwent change. The first modification was in the structure and timing of the math-science activity. Initially, it was expected that we could conduct the program by having students attend two after-school meetings each week--one counseling and one supplementary. Obtaining this time commitment from students appeared unfeasible, and instead the supplementary activities were designed as modules to be offered on a voluntary basis.

The second (and related) change in component 2 was one in emphasis--from a predominantly skills-centered approach to a more generic attitudinal and motivational one. Thus, an important objective of component 2, the reduction of math/science anxiety, was incorporated in the workshop component as Sessions 3 and 4. All participants would, therefore, be exposed to some math and science as well as to occupational information and career decision-making.

The number of structured math/science activities to be offered as discretionary options consisted of four major alternatives relating to math in careers and everyday life, and science in careers and everyday life. In addition, through the use of college student tutors the high school students could take advantage of skill-based instructional opportunities. The same alternatives would be available to participants in the second cycle, in addition to an SAT math preparatory mini-course. This mini-course would be available to cycle 1 "graduates" as well.

The remainder of this report is devoted to the session-by-session plan we developed under the planning grant. For each of the 11 sessions

we have included objectives, sequential strategies, and lists of needed resources. Although complete drafts of materials have been prepared, only selected, illustrative materials are appended. The reader should note that despite the fact that several techniques and pieces of materials have been pilot tested, the plan has not yet been implemented in a field setting in its entirety.

CAREER PATHS WORKSHOP SESSION PLAN

A one-page application form will be used by the high school counselors and advisors as a basis for the selection of participants. In mid-September, the selected participants will be contacted.

1. Participants will receive an:
   - IRDOE cover letter describing the program in detail and notifying them of acceptance into the workshop; and a
   - Student Questionnaire (See Appendix B) to be used as a baseline measure.
2. Also prior to the commencement of the first session, the school liaison will distribute and collect Parental Consent Forms, the original copy of which remains at the high school. After receipt of the completed Questionnaire and signed consent form, participants will be advised of the first meeting and the complete schedule of activities.

Session 1: Past Accomplishments

Objectives

- participants will identify major accomplisments in their lives.
- participants will identify the values and skills that contributed to their past accomplishments.

Strategies

1. Arrival

As students arrive they are greeted, registered, and provided with a looseleaf book of program materials. (10 minutes)

2. Welcome

A. Moderator welcomes students to the program and briefly explains the intent of the workshop, covering such topics as:

- program goals
- program outcomes
- selection criteria for participants
- some program highlights

B. Moderator introduces a keynote speaker who reviews history of the program and explains various institutional affiliations. She then speaks about the rationale behind the program, stressing:

- the need for women to take control over their own lives;
- the unique opportunities that exist for women in the world of work (see "Women in Selected Careers", Appendix C); and
- that women work for a substantial part of their adult lives. (15 minutes)

C. Moderator divides group of 30 into groups of six participants, so that no more than two participants from each high school are in the same group. (5 minutes)

3. Warm-up

In the small groups the counselor introduces herself and in turn all students give their name, school, and brief statement as to why they chose to participate in the program. Counselor explains that the workshop is directed toward career choice (learning about careers and educational opportunities, and decision-making). To start with, the group is asked to think about their first career fantasy. "What was the first thought or fantasy you can remember as to what you wanted to be when you grew up?"

Counselor starts off with this or a similar example:

> "When I was 8 years old my parents took me on a trip west to see some of the national parks. I remember in one park going on a nature walk with a naturalist whose name was Jenny, but everyone called her Grizzly Jenny. She got her nickname because of an adventure she had with a mother bear and her cubs. She was on a hike and was walking along side a stream when she saw a bear with her cubs. The bear started towards Jenny, then stopped because attacking Jenny would have meant leaving the cubs unguarded. The bear kept moving around, alternatively moving toward Jenny, then back toward the cubs. Jenny realized that the best thing to do was stand completely still, thereby presenting no threat to the bear. After a while the bear stood still in front of her cubs and Jenny began moving backwards very slowly. Jenny got away unhurt. This episode made Jenny a heroine in the park and I thought it would be great to grow up and be as brave and resourceful as Jenny and have other people admire me. She also impressed me with all she knew about the mountains, trees, and animal life in the park. She was the only female naturalist or ranger I saw on the trip and I thought it would be great to wear a uniform like hers and work in the outdoors. I also liked the fact that men and women much older than Jenny listened to everything she said and seemed to respect her."

Counselor then goes around the room, asking each girl to report her first career fantasy and asks each what was it she liked about that

occupation. (Counselor is taking notes while the participants are speaking, listing each participant's first career fantasy.) After participants are through, counselor asks each member of the group to tell the others what her current career plan or goal is for the future--her current fantasy. As each responds, counselor notes the current career choice. (20 minutes)

4. Feeling Good: Introduction to Skills and Values

Counselor says that we rarely share our fantasies with other people, as we have just done, and when we do we usually don't take it very seriously. In a similar way we often don't share with others our feelings about experiences or things we have done that make us feel good about ourselves.

The counselor describes something she did that made her feel good:

> "When I was 5 or 6 years old I got a pair of roller skates and learning to skate made me feel really good. It wasn't <u>just</u> learning how to skate that made me feel great though, it was something else. My mother allowed me to play outside but I had to stay on the block--I couldn't go further than the corner. Once I learned how to skate I travelled all around the block--after all, even my mother had to admit it was pretty dull skating back and forth on the same block. It only appeared right to skate 2 or 3 blocks away and then back home. I really loved this new sense of freedom and being on my own. At 5 years of age being able to go around the block meant a whole new sense of freedom, adventure, and independence. What was really great about it was being in a new places, seeing things, and feeling responsible for myself."

Counselor asks participants to list four things they have done in their lives that made them feel good about themselves, explaining:

> "Go back... include any event that made you feel happy (learning to ride a bike, cooking a meal, speaking in front of a group, planning a party), and then jot down next to each of the events you listed some thoughts as to why it made you feel good."[1]

Counselor goes around the room asking each partiipcant to read her list. She asks each student to expand a little, describing why it made her feel good. As participants are speaking, counselor lists all the values and skills they state or imply. The process is repeated for each participant.

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[1] See Appendix C, "Feeling Good About Myself." The authors wish to express our indebtedness to D. Chitayat and G. Berens, for their work with the "Motivation Advance Process", which served as a basis for this approach.

At the conclusion the counselor provides each participant with a list of her values and skills and explains that making values and skills explicit is very important in career and life decision-making. She tells participants that they will spend more time next week on this. (60 minutes)

Total time: 1 hour, 50 minutes

Resources

Space: one large meeting room or classroom with 40 moveable chairs and desk or table, five small meeting rooms with 7 moveable chairs and work table for 7 people.

Personnel: 1 moderator
4 counselors (moderator to serve as 5th counselor)

Materials: 30 looseleaf books
300 sheets of looseleaf paper
2 name tags and small group assignment
40 sheets of newsprint
1 roll of tape
30 pencils
6 thick point magic markers
30 copies of "Feeling Good About Myself"
30 copies of "Women in Selected Traditional and Non-Traditional Careers"

Session 2: Values and Skills in Occupational Choice

Objectives

- participants will understand that values and skills are important factors in occupational choice.
- participants will list specific values that are important to them.
- participants will understand that values change over time.
- participants will complete a skill self-assessment.
- participants will delineate the skills required for a specific occupation.

Strategies

1. Arrival

Students report to their small group room assignments.

2. Changing Values

Each participant receives a list of the 30 pairs of occupations--the first job fantasy and current career goals reported by all participants in Session 1. Counselor asks the students to review the list and discuss why they think almost everyone's career plans have changed. The counselor

talks about change as part of the life process. She covers the following points:

- it is normal and natural for people to change their goals;
- occupational goals have a lot to do with the values we hold, the skills we possess, and the skills we wish to acquire; and
- as we accumulate experience and information we alter or change our values and our assessment of our own skills.

Counselor reminds students of the "Feeling Good about Myself" exercise, explaining that certain activities make us feel good because of our values or skills. Things make us feel good if we realize a value or learn a skill while doing them. (15 minutes)

3. Value Listing

Counselor distributes "Value Checklist"[1] and tells group that this list of values includes all the values participants mentioned last week plus some more that they may not have thought of. She asks each student to read the list, to indicate which values are important to her, and to select the seven most important.

Leader asks for a volunteer to read her list. After one of the participants reads her list counselor asks her why she selected those seven. Did she select items that surprised her? Values she had not thought of before? Was there any pattern to her choices? This process is repeated with two or three participants. (15 minutes)

4. Skill Listing

Counselor talks about the importance of skills. As with the case of values, mastering and using skills contribute to making us feel good about the things we do. There are two ways we can review skills:

- we can look at skills as things we possess now--I'm a skilled babysitter; or,
- we can think about skills we would like to acquire--I'd like to really be able to get up and speak in front of a group.

Counselor distributes "Skills Checklist"[2] and asks each participant to review it just like the value list, and indicate her present degree of competence in each skill area.

Counselor asks two or three people to tell the group what skills they felt most competent in. Counselor asks one of the participants to tell how she currently uses the skills in her daily life. (15 minutes)

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[1] See Appendix C.

[2] Appendix C.

5. Activity Reporting

Counseling discusses the importance of realizing our values and using our skills in our daily life. In her discussion she refers to:

- the "Feeling Good about Myself" exercise in Session 1 where we started by thinking about situations that made us feel good from that we were able to see that using or learning skills or realizing a value contributed greatly to our positive assessment of something that happened to us.
- the last two exercises where we dealt with the same material, but we reversed the order--we first dealt with the skills and values that we have; now we will focus on the types of situations in which these values and skills are used.

A. Counselor distributes "Value/Skill Activity Form"[1] and asks participants to list the four values that are most important to them (as indicated on the "Value Checklist"), and the four skills they feel most competent in (as indicated on the "Skills Checklist"). For each value, students indicate where or how in their daily activity they realized it. The counselor asks participants to describe how or where they use their skills now. After participants complete the form the counselor asks each participant to read two or three of the items.

B. Counselor summarizes: There are three things to appreciate from the activities just completed:

- each of us can identify as our own a set of values and skills;
- each of us realizes our values and uses our skills in diverse sets of activities. Some values are realized best at home, some with friends, some at school. And the same is true with skills; some skills we use at school, some in hobbies, some with friends. (Counselor gives examples from students' reports.)
- values and skills are important in all aspects of our lives.

The leader stresses how important school was as an environment in which values are realized and skills attained.

- what do we do once we stop school, when we graduate? Work becomes an important means to satisfy our values and use our skills. (35 minutes)

6. Analyzing Work - Skills

Counselor presents some data concerning women in the work force (e.g., the percentage increase of women in the work force is twice that of men; 58% of the women in the work force are married) and says that since work is one of the important areas that we have to fulfill our

[1] See Appendix C.

values and skills let's analyze work or career options in terms of skills. She distributes a job description of the current career choice of each student and asks them to read it. Using a "Skills Checklist for Occupations" (Appendix C), students indicate what skills are required for the job. Counselor asks each participant to report the skills required for the occupation and to mention any surprises. (30 minutes)

7. Closure

- skills and values are two factors that are important in career decision-making;
- values change over time; and
- skill assessment can be done in terms of skills required for the job. (5 minutes)

8. Homework

Participants review skill checklist indicating what skills they would like to acquire.

Total time: 1 hour 55 minutes

Resources

Space: 5 small meeting rooms with work table and chairs for seven people

People: 5 group leaders/counselors

Materials: occupational list from Session 1
"Value Checklist"
"Skills Checklist for Occupations"
Individual job descriptions for each participant (to be created following Session 1)
"Value/Skill Activity Form"

Session 3: Mind Over Math©, Part I

Objectives

- participants will understand that fear of mathematics often leads to avoiding math courses and math-related activities.
- participants will identify major myths about mathematics and explain how these myths have contributed to their fear of the subject.
- participants will list at least 15 things they say to themselves or other say to them that increases their avoidance of mathematics. And,
- participants will understand that fear of math is not an individual problem but is shared by a large number of women.

Strategies

1. Arrival

This session will be conducted in two groups of 15 participants. Small group assignment will be made randomly at the time students arrive for the session. Each small group will be co-led by a counselor--primarily responsible for group process--and a mathematician--primarily responsible for math-related discussion.

2. What is math fear and avoidance?

The leaders introduce themselves and talk about their backgrounds and how they came to be interested in math avoidance.

An example of such a presentation follows:

> "I am a mathematician and taught math at the college level for several years before going back to school to study clinical social work. While in school as a graduate student I found that there were many bright people who said they simply could not do math and hated it. I began to wonder if difficulties with math might be more the result of attitude than a lack of skill and did a research study and found that was indeed the case. For the last three years I have been running programs to help people get over their fear of math. The participants in this program have been adults as well as students." (10 minutes)

3. What is Math?

Participants will be asked to share their experiences with math and to give their opinions about what math is really like. After about fifteen minutes a list of twelve math myths will be distributed for further discussion. (See Appendix C.)

Students will be asked to talk about their math teachers, parents' and friends' attitudes toward math, how they themselves feel when faced with math, how their feelings about math may have affected their career choices. Student experiences such as the following are quite common:

- o feeling humiliated when called to the blackboard to solve a problem;
- o being verbally or physically abused by a math teacher for giving an incorrect answer;
- o being told they will never be able to do math;
- o being in a state of panic when faced with any numbers ("an iron curtain comes down and I can't think").

Students will not be called on but will be encouraged to speak freely and interact with each other. Care will be taken to see that each student has a chance to talk about herself. The leaders will

underscore major issues, put to rest the math myths, and bring their own experiences freely into play. The mathematician will talk about times when she had difficulty with math. She will draw from her own teaching and research experience in clarifying how math is really done, (using intuition, using many different methods of solution for a single problem, struggling with new concepts and problems).

The leaders will summarize the common feelings and experiences that the students have shared. Leaders will point out that since others have had similar experiences, they can view their difficulties as less personalized and more of a group problem or concern. The major reason for overcoming math fears and math avoidance will be presented as permitting participants to have greater choice in careers, to pursue more varied and interesting options, and to not have to eliminate choices because of math requirements. (50 minutes)

4. Presentation of Mathematical Material

A. The mathematician will ask the group what they think of the idea of reviewing some material that includes numbers. It is expected that this will cause an intense shift in attitude of the group with a visible rise in tension. Responses are likely to range from "I'd rather not" and "Do we have to?" to "Let's get on with it!" and "I don't care." These reactions will be explored and the obvious effect of just the mention of math will be underscored.

B. After anticipatory feelings about the material have been discussed, the leader will say:

> "We are going to pass out a sheet of paper with a story about what we did during the day. There is no specific question we want you to answer, but we would like you to make up a problem you can solve from any of the information you find in the story. Be sure it is something you can do. In addition, and this is the most important thing, we want you to write down whatever feelings you may have about the material. We will not look at anything you do and will only ask you to discuss your reactions."

As the papers are handed out any questions that are raised about the nature of what is expected will be answered. (See "A Typical Day", Appendix C.)

C. When students have looked over hand-out material for about ten minutes, they will be asked to share their thoughts about it. They will be given ample opportunity to voice their frustrations and to compare their reactions to this material with the reaction they have to math

in other situations (e.g., on tests). It is likely that most students will focus on something in the hand-out that they cannot do (despite the instructions to make-up a problem they could solve). This will be underscored and the math-leader will discuss how mathematicians always like to start with easy problems, and when faced with a problem they cannot solve they start by making up an easier, but related problem that they can solve. (40 minutes)

5. Math Games People Play

The leaders will remark that much of the preceding discussion centered on negative things that students said to themselves when they had to do math. This leads to a self-defeating cycle of feeling that they can't do math. Other people often reinforce these negative feelings.

List of "Math games we play" will be handed out for discussion, and will serve as a summary for the session. Students will make personal additions to the list. (See Appendix C.) (15 minutes)

6. Closure

Students will be told that next week's session will focus on working together to develop some intuitive ideas about calculus. They will not need to know any math to do this. They will learn how to approach math problems in original and creative ways.

The homework for the week is to take special note of any contacts and experiences they have with math, and to use the lists of myths and math games we play to see how they and others react to math activities in the course of the week's experiences. (10 minutes)

Total Time: 2 hours

Resources

Space: two meeting rooms each with 17 moveable chairs

Personnel: 2 mathematicians
2 counselors
(all experienced in counseling, small group work, and math avoidance)

Materials: 60 sheets of looseleaf paper
"Twelve Math Myths"
"A Typical Day"
"Math Games We Play"

Session 4: Mind Over Math©, Part II

Objectives

- participants will list five criteria to use to determine the appropriate approach to solving math problems.
- participants will understand some of the basic concepts of calculus.
- participants will understand how to solve some math problems by applying skills they already possess in other areas. And,
- participants will understand the use of intuition and guessing when solving math problems.

Strategies

1. Arrival

Students reconvene in Session 3 groups.

2. Review of Math Experiences

Participants will be asked if they have had any contact with math since the last workshop (this contact may have been in daily activities or in a math class), or if they noticed any "math games" being played. Positive experiences marking change and growth will be underscored. They will also be asked if they have had any additional thoughts about math requirements relative to their career choice. (20 minutes)

3. What is Calculus Anyway?

The mathematician-leader will tell the group that they will begin to work together to discover some of the basic ideas of calculus. During this discussion the group will also develop a list of recommendations for approaching most math problems. This list will include:

- start with what you know rather than what you don't know;
- make up an easy problem related to the one you are interested in;
- don't skip any steps;
- write down math thoughts and ideas without worrying about how useful they will be;
- translate word for word;
- don't hesitate to look up things you are unsure of... just as you would look up the meaning of a word in a dictionary if you did not understand it; and
- use your intuition.

The mathematician will explain that intuition is the cornerstone of doing math. Often students do a problem correctly but then lose confidence and erase it. The first try is the more intuitive and is more likely to be correct.

The counselor-leader will sit with the students while the mathematician-leader is at the blackboard. The counselor will continue to

encourage students to verbalize any reactions they may be having to the mathematician or to the mathematics being discussed. This will serve as a model of how to become more assertive in situations with their own teachers.

The mathematician will begin by discussing students' conceptions about the word "calculus"; it is a strange word that has no meaning to most people. In mathematics, as in a foreign language, new words have to be learned. There is no reason to think participants should know what a word in math means until someone explains it to them. And in mathematics, common words are often used in uncommon ways. For example: rational numbers have nothing to do with reasonable or sane; irrational numbers are not "crazy"; when working with fractions, "multiply" does not mean get bigger but means "take a fraction or portion of."

The students will be told that half of calculus has to do with finding the areas of funny shapes. The mathematical part of the discussion will involve deciding what shapes are "funny" and then discovering how to approximate their area using the areas of objects that are familiar like triangles and rectangles. Other topics to be covered by the mathematician include:

- how to find the area of rectangles;
- how knowledge of rectangles enables you to find areas of triangles;
- "funny shapes" are shapes with curves (excluding the circle);
- common elementary figure with a curved shape will be drawn;
- a rectangle will be inscribed as a first approximation to the area;
- additional triangles and rectangles will be added to improve the approximation;
- the advantages of just using rectangles will be discussed;
- a systematic way of inscribing rectangles will be developed;
- there will be a need for an infinite number of rectangles; and
- the concept of "infinity" will be discussed.

Students will be asked to "guess" answers to problems and list suggestions on how to approach problems. No value judgments will be made of any suggestions and the group will later decide on what things to keep and what to discard.

Students will be led to develop criteria for choosing between different approaches to a solution (efficiency, simplicity, clarity, generality) and in so doing will come to better understand how math

evolves over time. It will become clear that it is really not much different than other subjects. (70 minutes)

4. Closure

Each student will be asked to talk about the ways in which she has been pleased or disappointed by the four sessions, and if she feels she has made any changes regarding math. All positive changes will be reinforced. (20 minutes)

Total Time: 1 hour, 50 minutes

Resources

Space: two small meeting rooms each with 17 moveable chairs and a small blackboard

Personnel: 4 group leaders (same as Session 3)

Material: 100 sheets of looseleaf paper

Session 5: Career Exploration Field Trip

This session consists of a field trip to an industrial site. The specific site will be selected on the basis of the following characteristics:

- a diversified staff representing a wide range of semi-skilled, skilled, and professional employees;
- a large number of employees in technological and technician occupations;
- a high percentage of women in non-traditional occupations;
- a representative group of women in traditional occupations; and
- facilities to accommodate program needs.

The field trip will be held on a weekday so as to maximize the number of workers who can be observed. Arrangements will be made to release students from school.

Objectives

- participants will be able to identify at least ten non-traditional career options for women.
- participants will be able to list for each career the skills, education, and entry-level requirements. And
- participants will identify at least one personal contact for future career information.

Strategies

1. Transit

A. Participants will be met by bus at their high schools and transported to the field visit site. All participants will travel together on one bus with the program moderator, one licensed teacher, and one counselor.

B. During the trip the moderator will describe the nature and kind of business the company performs. The moderator will generate a list of questions students feel appropriate to ask the people (role-models) they will meet. The list will include:

- What is your job title?
- What are the working conditions?
  Do you work alone?
  Do other people help you?
  Do you work only in an office or a factory?
- What skills do you need for your job?
- How much education is required?
- What is the pay?
  How much can be made when you first start?
  How much can you expect to make someday?
- What is most interesting about your job?
- What is least interesting about your job?
- What opportunities are there for advancement?
- What do you wear on your job?
- What don't you like about the job?
- What is your typical day like?
- Does the job affect your family life?
- How did you get this job?
- How would I go about getting a job like yours?
- Do you work with the public?
- If I wanted a job like yours, what should I do about school and training?

Moderator will outline the day's schedule, and instruct students to note what they observe.

2. Morning Session

A. Greeting. Meeting as a large group the participants will be welcomed by a company spokeswoman who will discuss the nature of the business the company is involved in, the number of employees, the number of women employed at various jobs, the employee turn-over rate, the number of new employees hired yearly, and what the company looks for when hiring new workers.

B. Tour. Participants will tour the facility under the direction of an employee and the program staff. The tour will cover as many different areas of employment as possible, ending in the employee cafeteria where participants will have lunch.

3. Afternoon Session

A. Shadow learning. After lunch the participants will form 10 groups. Each small group of three will meet a female employee of the company. The small group and employee assignments will be predetermined

by program staff based on student expressed occupational interest. The groups will spend approximately one hour closely observing, working with, and talking to the employee at her work station. Employees will be contacted by program staff prior to this session to insure that students have the opportunity to:

- observe actual work activity;
- engage in hands-on work experience; and
- discuss the details of the employees' jobs and their expectations.

B. Closure. The full group will reconvene for formal leave taking.

4. Return Trip

Participants will be returned by bus to their high schools. During the trip, the moderator will elicit student reactions and a list of all the occupations they just learned about. Moderator will lead discussion of students' perceptions of women in traditional and non-traditional careers including an assessment of the advantages and disadvantages of each.

Total Time (including travel): 6 hours

Session 6: Career Information

Objectives

- participants will identify primary sources of occupational information.
- participants will identify what types of information should be gathered about occupational options.
- participants will list at least 12 job titles.
- participants will identify employment, educational, and skill requirements for at least three occupational alternatives.

Strategies

1. Arrival

Participants meet together in a large room.

2. Introduction to Gathering Career Information

Moderator discusses importance of gathering good occupational information and the kinds of information needed to understand career options. A model of the moderator's presentation follows:

> "One of the important ingredients in making decisions about our lives is to gather as much information as is practical before we make a decision. We spent time in Sessions 1 and 2 talking about our personal values and skills, then we worked on some of our math and science fears. At our last session we spoke with workers in a number of different jobs.

"There are over 30,000 different job titles in America today. For us to make a decision as to what career we would like we should know about different jobs--we can't know about all 30,000, but the more we know the better the decision we can make. We don't need to know about all 30,000 jobs because we already know some things that might be of interest and some that wouldn't. When we talked about values and skills we concentrated on what we value, what we like to do, and what we are good at doing. Implied was the fact that there are things we do not value, do not like to do, and do not want to learn about. For example, if I know that I am not skilled in foreign languages I won't investigate occupations such as translator for the U.N. Similarly, if I value travel more than I value staying at home, I probably would be more interested in being an archeologist than an accountant.

"Today's session will be devoted to learning more about careers. The session is planned so that you will learn about some careers that you may not have even heard of before. But more important than that is the expectation that from today's session you will learn how to gather information about careers on your own.

"There are really two aspects to gathering career information. First we discover all the careers that exist that might be of interest. There are so many careers that often people make decisions without even knowing all the opportunities that are available. It is important to expand or enlarge the number of options we have before we commit ourselves. One of the most common mistakes people make when making decisions is not knowing the alternatives that are available. But knowing that a certain occupation exists is not enough. Just being able to say a job title--radiation technologist--doesn't tell us much about what a radiation technologist does, how much training is required, what employment opportunities are available, how much money she makes, and all the other things we might like to know. The second aspect of gathering career information is collecting details about the important characteristics of a job." (15 minutes)

2. Job Title Search

At the rear of the large meeting room there are five tables and chairs. On each table is a copy of the Dictionary of Occupational Titles, Occupational Outlook Handbook, Lovejoy's Career and Vocational Guide, some career pamphlets, and a felt marking pen. On the wall above the table are large sheets of newsprint representing five areas:

- careers that have to do with health;
- careers that have to do with communications and the arts;
- careers that have to do with social sciences;
- careers that have to do with science and math; and
- careers in business.

After the moderator gives a short introduction to the use of the resource books, she assigns students to tables (six to each table)

according to their expressed occupational interest. She explains that each group will have 15 minutes to identify as many job titles as they can in their career area. The groups are instructed to list job titles on the newsprint. (20 minutes)

3. Career Characteristics

A. When the groups have finished the moderator reminds the students of the field trip and the kinds of questions they asked the workers. She distributes a copy of "Career Characteristics Data Sheet"[1] to each participant indicating that this form summarizes many of the questions that they raised. The moderator reviews the form. She asks the participants (who are still seated in groups of six at the tables) to form two three-person teams at each table. Each team selects one of the jobs on their list and completes the "Career Characteristics Data Sheet" for that job. The teams work independently with the moderator circulating, assisting participants in the use of the materials, and encouraging participants to use multiple resources. (30 minutes)

B. When the teams have completed this exercise the moderator suggests that teams at the same table interview each other about their respective occupations. One team starts as interviewers and the other as the interviewees. After about 10 minutes they reverse roles. The goal is to find out as much as possible about the jobs. (20 minutes)

4. Summary

A. Moderator asks group to consider that both last week and today the goal was to gather career information using, however, different approaches: observation of and discussion with workers, and printed materials. Moderator, using chalkboard or newsprint summarizes student responses to the question, "Are there any differences in the kind of information you can get from these different resources?"

B. Moderator distributes take-home materials and describes the contents, which include:

- a complete list of job titles in the five career areas;
- approximately five complete "Career Characteristics Data Sheets" in each career area; and
- a copy of the "Guide to Gathering Career Information."[2]

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[1] See Appendix C.

[2] See Appendix C.

C. Moderator emphasizes the need to continue collecting career information; she mentions that their school library and public libraries have the Dictionary of Occupational Titles and the Occupational Outlook Handbook and suggests that participants read the "Guide to Gathering Career Information" before the next session. (15 minutes)

Total Time: 1 hour, 40 minutes

Resources

Materials: Dictionary of Occupational Titles - 5 copies
Occupational Outlook Handbook - 5 copies
Lovejoy's Career and Vocational Guide - 5 copies
Career pamphlets
Newsprint
5 felt markers
Blank "Career Characteristics Data Sheets"
"Guide to Gathering Career Information"
Completed sets of "Career Characteristics Data Sheets" (See Appendix C for a sample of one career in the Communications cluster.)

Session 7: Educational Awareness

Objectives

- participants will list the educational requirements for a specific career choice.
- participants will identify primary sources for obtaining information about training and schooling options.
- participants will identify what kinds of information describes training and schooling options. And
- participants will list five educational options.

Strategies

1. Arrival

Participants convene in large, general meeting room.

2. Introduction to Gathering Educational Information

Moderator discusses the importance of gathering information about educational options prior to decision-making. Her introductory remarks cover the following points:

- gathering information about educational options is similar to gathering information about career choice;
- educational alternatives include four-year colleges, two-year colleges, technical or trade schools, and apprenticeship programs;
- there are numerous options available--more than 3,300 colleges and universities in this country and thousands of trade school;

- there is much information that we need to know about a college or school to be able to make a decision about where to go; for example, we need to know something about such things as school size, location, cost, facilities, and student services. We also need to know something about the courses of study provided--majors, required courses, and accreditation.
- she distributes copies of "College Selection Fact Sheet"[1] and reviews items. (20 minutes)

3. Discussion of College Programs

Participants are divided into five small groups. Their group assignments are based on occupational interest: business, health and biological sciences, social sciences, math and phsycial sciences, and communications. Each group will meet separately with representatives from two different schools. With each they will discuss:

- how to read a college catalogue (copies of a college catalogue will be provided);
- understanding required courses, major courses, and electives;
- typical courses of study in sample career areas;
- the relationship between school subjects and job requirements;
- placement possibilities after graduation from college; and
- size, student body composition, costs, and other characteristics about the college.

The college representatives will include faculty and students. The participants will be encouraged to ask questions and to complete a "College Selection Fact Sheet" for one of the colleges. (1 hour)

4. The Need to Continue Gathering Information

Participants will reconvene as a large group and moderator will discuss the importance of continuing to gather college information. She will indicate that their high school college advisor has many college catalogues available and can assist them in learning about college, trade school, and technical school opportunities. She suggests that participants begin a file about colleges, using the "College Selection Fact Sheet." (10 minutes)

5. Computer Assistance

Moderator summarizes and reviews the various ways to collect information: talking with high school teachers and counselors, talking with college students and women already working in their field of interest, meeting college admissions staff, and reading catalogs and guides such as "Lovejoy's" and "Barrons." The moderator introduces the group to a

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[1] See Appendix C.

computerized system, explaining the availability of computer programs that provide college information. Two or three students volunteer for a computer search. The moderator distributes a schedule indicating when computer terminal will be at each of the high schools and suggests that participants make an appointment to use the computer. (20 minutes)

6. Closure

Moderator concludes the session with a description of next week's meeting. (5 minutes)

Total Time: 1 hour, 55 minutes

Resources

Space: one large meeting room with moveable chairs; five small meeting rooms

Personnel: One moderator
Representatives from approximately 20 colleges

Materials: "College Selection Fact Sheet"
College catalogues

Hardware: Computer terminal

Session 8: College Admission and Financial Aid

Objectives

- participants will learn the hows of applying to college and will be able to complete a college admission application.
- participants will identify at least five possible sources of financial aid, and will be able to complete a financial aid application. And
- participants will identify their areas of strength and weakness with regard to gaining admission to college.

Strategies

1. Introduction

Moderator welcomes group and tells them that last spring when they were asked what topics they wanted to discuss in the workshop a large number indicated a desire to discuss all the topics that have been covered. The largest number, however, wanted information about college admission and financial aid. Session 7 and Session 8 are designed to deal with the college selection process. Last week's session (7) dealt with how participants decide on a college--what information about the school and course of study the student needs to make an informed choice. This week's session focuses on how colleges decide who they

will accept. Moderator briefly introduces panel members. They are a:

- college financial aid officer;
- college admission officer from the City University of New York;
- college admission officer from the State University of New York;
- college admission officer from a private college; and a
- high school college advisor. (10 minutes)

2. Financial Aid

The first panelist is the financial aid officer who talks about procedures for applying for aid and the process used to determine eligibility. She covers such topics as:

- state and federal financial aid programs;
- school-based financial aid programs (scholarships);
- private sources of assistance;
- standardized financial need statements;
- what a college looks for when reviewing requests for assitance;
- common mistakes students make on aid request forms; and
- alternatives to aid programs (e.g., work-study, deferred loans).

As part of her presentation the speaker will distribute resource material on various financial aid programs (for list of materials see "Resources" below) and will summarize her talk with a checklist of "do's and don'ts" when requesting financial aid.

3. College Admission

Moderator briefly discusses the differences in the admission processes of private colleges, the City University, and the State University. She directs the participants to work in small groups with the college admission representatives who will describe the admission procedure at their institutions. Participants will have the opportunity to meet for 30 minutes with two representatives. The college admission officers will speak to the groups about "what a college looks for when reviewing an application." They will cover such topics as:

- how to complete a college application form;
- common mistakes students make on college applications;
- how students can make their application stand out;
- what weight is given to various courses;
- admission criteria;
- what tests are required for admission; and
- application deadlines.

As part of her presentation each admission officer distributes blank application forms, reviews them, and hands out published materials about standard testing. She summarizes by giving participants a checklist of "do's and don'ts" when applying for college admission. (30 minutes)

4. College Admission, Continued

The above activites are repeated as students move to meet the representative of another type of college. (30 minutes)

5. Assistance from the College Office at the High School

Moderator reconvenes the large group and introduces a high school college advisor. The purpose of this presentation is to delineate the role of the advisor in assisting students in selecting colleges to apply to, arranging for standard tests, forwarding transcripts, getting letters of recommendation, meeting deadlines, and applying for financial aid. Each student will be provided with a calendar of important dates that includes application, testing, and financial aid deadlines. (15 minutes)

6. Summary

Moderator summarizes the session and thanks guest speakers. The speakers remain for another 15 or 20 minutes to meet individually with students who wish to stay. (5 minutes)

Total Time: 1 hour, 55 minutes

Resources

Space: one meeting room with 40 chairs
three meeting rooms with table and chairs for 15 people

Personnel: Moderator
High school college advisor
College Financial aid officer
Admission officer from CUNY
Admission officer from SUNY
Admission officer from a private college

Materials: 30 copies of:

Student's Guide to Five Federal Financial Aid Programs, 1978-79, HEW, OE #246-622
Meeting College Costs, College Scholarship Service of the College Board
Financial Aid Form, 1978-79, College Scholarship Service of the College Board
"SAT Announcement"
Tuition Assistance Programs and Other Financial Aid Opportunities for NYS Students, NYS Higher Education Services Corporation
Federal Student Financial Aid, HEW, OE #78-17701
sample private college application forms
sample of a private school's financial aid application
sample of CUNY application form
sample of SUNY application
Financial Aid "Do's and Don'ts" Checklist (to be created)
College Application "Do's and Don'ts" (to be created)
"Calendar of Important Events" (to be created)

Session 9: Career and Lifestyle Options

Session 9 takes place on a Saturday at a community college campus.

Objectives

- participants will identify at least six non-traditional careers for women.
- participants will list the skills required for two careers non-traditional for women.
- participants will identify major advantages and disadvantages of non-traditional careers.
- participants will identify lifestyle alternatives. And
- participants will understand major decision-making points in career-lifestyle planning.

Strategies

1. Introduction

Moderator introduces six panelists, each of whom represents different non-traditional occupational areas and lifestyles. The career areas are: social sciences, communiciations, health sciences, physical sciences, law or law enforcement, and design (industrial or architectural). In addition to ethnic and social diversity, the panelists will also vary: single and married women; single parent, no children, traditional family; part-time and full-time workers; and women who completed all their education in a short period of time and women with interruptions in their schooling.

As part of her introductory remarks, the moderator distributes the exercise "Career Decisions for Women."[1] She tells participants that each panelist is going to speak about herself, her work, schooling, personal history, and the things that helped and hindered her career advancement. The exercise includes a number of questions that participants might want to keep in mind while listening to the speakers. (10 minutes)

2. Biographies of Women Workers

The panelists speak in order (each for approximately 20 minutes) making extensive personal references. The following topics will be covered by each woman:

- her childhood career fantasies (similar to exercise participants completed in Session 1);
- current career position;
- when she first decided on her present career;
- aspects of her work that are most exciting, interesting, or stimulating;
- plans for the next ten years;
- educational background;
- family life and family plans;
- how she secured her first job;

[1]See Appendix C.

After all panelists have completed their presentations, the moderator will direct a short question and answer period. Lunch will follow, with panelist available for informal dialogue with participants. (120 minutes, excluding lunch)

3. Typical Day at Work

During lunch, moderator distributes specific room assignments for each participant. Moderator explains that students will participate in two small group meetings each lasting approximately 30 minutes where they will get to talk with a panelist about her occupation. The students also get two copies of the "Career Characteristics Data Sheet" and "Skill Checklist for Occupations." The moderator recommends that they use these forms to keep notes and summarize the discussion with the panelist.

Participants report to their first assigned room. The groups of five and the panelist have been selected on the basis of expressed occupational interest. Panelist will discuss her job, presenting it in the form of "typical work day." They will discuss such things as attending meetings, writing reports, working with equipment, people they come in contact with (supervisory and co-workers), tedious as well as stimulating aspects of the job, and the skills required of them. They will also focus on types of courses, training, and work experience that proved valuable; other career options open to people with similar training; and labor market prospects. At the end of 30 minutes the students move on to their second small group meeting with one of the other panelists. The content outline for both small group meetings is identical. (60 minutes)

4. Being a Woman Careerist

Participants are in a large meeting room. Under the direction of the moderator, the panelists discuss the realities of being a woman and having a career. The topics covered include:

- problems in getting that "first job";
- problems in getting promotions;
- the advantages of being a woman in certain fields;
- working and home life and family-marriage plans;
- the social pressures of being a woman and having a career; and
- the family pressures, especially from parents, of having a career. (40 minutes)

5. Conclusion

Moderator ends discussion, and if time permits encourages students' questions and comments. She distributes copies of each speaker's autobiography (which served as the basis of morning talk by panelist) and typical day at work narrative (which served as the basis of afternoon small group discussion). She thanks panelists and ends session. (5 minutes)

Total Time: 4 hours, 55 minutes (excluding lunch)

Resources

Space: One large meeting room (for 45 chairs)

Personnel: Moderator
6 role model/panelists

Materials: "Career Decisions for Women"
"Career Characteristics Data Sheet" (see Session 6)
"Skills Checklist for Occupations" (see Session 2)
"Autobiographies: (one each from each of panelists)
"Typical Day As a..." (one from each panelist)

Session 10: Decision-Making

Objectives

- participants will understand the importance of values, skills, and interests in career decision-making.
- participants will identify the components of career decision-making.
- participants will describe their career, educational, and personal goals.

Strategies

This session will be conducted in five small groups. As participants arrive they are directed to small meeting rooms, using the same assignments as those for Sessions 1 and 2. The groups are led by counselors.

1. Introduction to Decision-Making

A. Counselor starts the session by saying:

"We have covered a number of topics in these workshops. We spent time talking about values, interests, and life-style concerns; skills including those we have and those we would like to acquire; skills that are required by different occupations; satisfying our values through work; educational and occupational opportunities; and the role or women in the labor market--especially women working in careers generally considered non-traditional for their sex.

Today's session, as well as the next, is planned to bring together all this information and to focus it specifically on your plans and needs for the future.

"This is the tenth meeting we've had. I'd like to make the assumption that attending these sessions meant that all of you had to make some changes in what you would normally be doing on a Thursday afternoon. Now, I'd like to ask you to tell us what you would usually be doing--what you had to decide between." Counselor lists all the alternatives on newsprint.

"Now. Why did you decide to attend? What does this decision say about your values?" After participants respond, leader summarizes by indicating that:

- the alternatives were different for different people;
- everyone made the same decision; and
- the values or needs that this decision represents are different for different people.

B. Counselor distributes "Ellen's Day."[1] After students read the story she says: "It is obvious that Ellen made a lot of decisions. What I'd like you to do is write down all the decisions that Ellen made." When the group has finished, the counselor asks them how many decisions they came up with. With the group she reinforces the following points:

- We make decisions all day long;
- some decisions are more difficult to make than others;
- some decisions are made almost "automatically"; and
- some decisions may be made by others because we can't decide (e.g., Ellen's hairstyle).

Counselor asks for volunteers to read one or two of the decisions they judge as important and why they judge them so. After students respond, the moderator explains that many different decisions were selected by the group as being important and, even in situations where the same decision was picked by different students, the reasons given differed. She goes on to explain that there are some generalizations that seem to be true:

- decisions are important if they are related to a personal value or belief; and
- decisions are important if they have implications for the future--that is, if they affect what we will or will not be able to do at some later time. (60 minutes)

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[1] See Appendix C.

2. Making Decisions

A. Counselor says: "In the 'Ellen' story we looked at decisions someone else made and tried to determine which were important, and why. Now, let's try to make decisions for another character." Counselor has participants form two-person teams and distributes copies of "Cindy: The Biography of a 16 Year Old Girl."[1] She asks them to read the biography and to list goals in three areas--career goals, educational goals, and lifestyle goals.

B. When groups are finished and lists shared, counselor asks the students if they think Cindy will attain all her possible goals in each of the three areas, noting those that conflict. She tells the participants to decide which goals Cindy will achieve and to write a brief narrative of Cindy's life in 10 of 15 years from now. "You can create any future you want for this character, but be sure to consider the information you have about Cindy--her values, skills, and interests--as well as the opportunities that exist in the outside world."

When the groups have completed this task (or when the time limit is reached) counselor asks each team to present their narrative. After all the teams have done so the moderator highlights some of the goals they all thought Cindy pursued and asks the participants why they think they made many of the same choices. The teacher does the same thing where teams made different decisions among goals.

Counselor summarizes by indicating that decision-making requires information about schooling, career, and lifestyle alternatives; as well as an understanding of our values, skills, and interests. "We are often faced with situations where our needs point us in several directions at once, and we are forced to choose. In this last exercise, all of us made choices for Cindy. What we tried to do is make these choices (decisions) based on what values we thought were most important to her; or what we thought would satisfy most of her values, skills, and interests; or what outcomes we thought were most realistic." (45 minutes)

3. Summary and Take Home Exercise

Counselor distributes "Personal Goal Statement",[2] instructing students to complete it at home before the next session. They are to list as

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[1] See Appendix C.

[2] See Appendix C.

many possible goals as they think they might have in the areas of education, career, and personal life. Just as they did for Cindy, they should then decide among these goals using what they have learned about themselves and the outside world. She reminds them to review their "values" and "skills checklists" and their career information and college information forms. Students are instructed to star those goals that they listed in each area which they most want to attain given their values, skills, and interests; and that they feel are attainable. (15 minutes)

Total Time: 2 hours

Resources

Space: Five meeting rooms with tables and seven chairs

Personnel: Four counselors
One moderator (who also serves as a small group leader)

Materials: "Ellen's Day"
"Cindy: Biography of a 16 Year Old Girl"
"Personal Goal Statement"

Session 11: Career Pathing

This session is scheduled for a Saturday.

Objectives

- participants will list the steps necessary to accomplish selected goals. And
- participants will construct a personal career plan for the next 18 months.

Strategies

1. Introduction to Planning

On arrival students are directed to small group meeting rooms. (Their assignment and counselor is the same as in the previous session). The counselor begins the session by reviewing Ellen's decisions, focusing on long-range and short-range goals and how the decisions made at each point have implications for future decisions. Counselor explains that goals are attainable in stages, such as getting a part-time volunteer job in a hospital to see what it would be like to have a career in the health services. The leader encourages the participants to examine the implications at each stage, noting the advantages and disadvantages in both the short-term and long-range future. She says:

"Our goals for the future help us form the criteria or rules by which we judge the choices along the way. The decisions that we have to make, especially regarding schooling and careers, are based on our awareness of where we are now and where we want to be sometime in the future. The middle ground between where I am now and where I want to be in the future is our personal career plan--the steps necessary for us to realize a goal or acquire a skill. For example, if we wanted to have a party next week, we have a goal--the party; to reach that goal we must do certain things, make certain decisions--who should we invite, what kind of food should we have, what kind of music should there be?

"Another important result of thinking about our future goals and our immediate needs is that often we can think of new options, new solutions to problems that we hadn't thought of before. For example, if it is important to Ellen to increase her chances of getting into college, then maybe she needs to take the SAT course; but she also wants to buy the blazer and the present for her boyfriend. By thinking about both the present and the future maybe she can think of new solutions such as:

- taking the SAT course and getting <u>either</u> the blazer or the present but not both;
- research SAT-preparation courses and finding one that may be as good but cheaper:
- seeing if her parents can give her some of the money toward the course; and/or
- planning to work overtime or finding some additional work for a few weekends to make extra money.

Participants are asked to review their "Personal Goal Statement" and make any additions or changes they wish. (20 minutes)

2. Course Planning

A. Counselor asks participants to list all the courses that they will be <u>required</u> to take next year (their senior year) in school. Underneath these they are asked to add to the list all the electives (free) courses they could take next year. They should list <u>all</u> the courses they know about. Next to each course students are instructed to write a short statement explaining why they should or should not take that course--the advantages and disadvantages of each option. Counselor asks volunteers to read on or two of their statements. (25 minutes)

B. Counselor then asks participants to look at their goal statements and review their value and skill checklists and to reread the list of advantages and disadvantages. She instructs them to put a plus sign (+) next to those options which will help them reach a goal, and a minus sign (-) next to options that don't help them accomplish what they want.

Participants are encouraged to use multiple plus and minus signs--put a number of plus signs (++++) next to items that seem really important or valuable and a lot of minus signs next to items that are really unimportant. (20 minutes)

C. Participants are encouraged to report any patterns in the options open to them. Counselor should elicit participant response in terms of;

- options that were never considered before;
- choices that become clearer when reviewed in terms of long-term goals, values, and skills;
- combined options--doing something because of long-range needs while doing others for immediate needs or gratification (taking an elective math course because it might be of value for future career choices, and taking another course because it's fun or easy);
- more meaningful decisions and more important choices because they relate to personal concerns. (15 minutes)

3. Career Planning

A. Counselor briefly introduces planning. A sample presentation follows:

"Career planning is frequently viewed as either a highly complex activity requiring specially-trained professionals or as a relatively simple activity that can be done at the last minute. In the first view, the career plan tends to become a rigid, one-time activity; in the latter view, the plan is disposed of as soon as the immediate problem is resolved.

"Our view is in the middle, and is based on the assumption that each individual possesses the ability to plan for her own future and can learn to do so in a more disciplined way. We think career planning is complex, but not difficult. It requires some skills, but not extensive training. We believe that better decisions concerning careers, education, family, and lifestyle can be made with a greater probability of satisfaction, if they are made in the context of an overall plan. We view a well-executed career plan as neither something permanent nor something immediately discarded. A personal career plan is flexible. A good plan clearly delineates your goals, makes explicit your own values and resources, and emphasizes the activities that you might engage in to meet your objectives. A good career plan permits you to quickly change what you need or what you do in light of new information and insights. And perhaps most important, a good career plan helps you see in advance areas of conflict.

A career plan is personal. You can learn from others' experiences; but their goals and their solutions should be viewed as being informative and not the final word. Even if it were possible for two women to have the same goals, the same values, and the same skills, it is doubtful they would have the same career plan. A career plan contains two parts: first, a list of goals--where I want to be; and second, a strategy--the things I have to do to

reach my goals. We have already done part one." (10 minutes)

B. Counselor distributes "Plan for Action",[1] and directs students to the box labelled START telling them to list one of the career goals from their Personal Goal Statement. She explains the directions and participants complete the exercise. The intent is to have participants plan specific activities that they can do within the next 18 months to either reach their goal or, more likely, come closer to realizing their goal. Categories of activities to keep in mind include:

- gathering career information: reading books, writing away for free literature, talking to people in the field, visiting work sites;
- acquiring skills: taking relevant course work, work-study/ cooperative education, independent study;
- schooling: completing high school, learning about college options, training programs or on-the-job experience;
- gaining experience: working part-time or summers in related field, doing volunteer work. (40 minutes)

4. Next Steps

The final activity deals with "next steps" in career planning. The counselor reviews the plan they produced for the next year and a half, explaining that they need to be a little more specific concerning what needs to be done now. Counselor says, "In the sessions we have had so far you received some information about careers, some insight into your values and goals, some information about educational opportunities, some understanding of skills, a look at our fears concerning math and science, and some opportunity to meet with women working in non-traditional careers. Obviously you did not get all the information or ideas or knowledge of options that exist. The question you need to ask yourself is 'what do I need to do now', to help me clarify my plans, goals, and decisions." Counselor distributes two-page "Next Steps"[2] exercise and asks participants to check those things they need to do. (20 minutes)

5. Summary

Project staff address the large group about the importance of continued career planning, the opportunities that are available if participants seize them, and the need for women to make decisions based on their own self-understanding. (15 minutes)

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[1] See Appendix C.

[2] See Appendix C.

6. Certificates and Refreshments

Moderator distributes certificates of completion to participants and closes meeting with thanks and appreciation to participants, counselors, and other people who helped. Refreshments are served. (15 minutes)

Total Time: 2 hours, 45 minutes (excluding refreshments)

Resources

Space: Five meeting rooms with table and chairs for 7 people
One large meeting room

Personnel: 1 moderator
4 counselors

Materials: "Plan for Action"
"Next Steps"
30 sheets of looseleaf paper

Followup

Three weeks after the final session, participants receive a followup questionnaire intended to assess program impact. A sample questionnaire is appended (see Appendix B.)

SUPPLEMENTAL ACTIVITIES

The supplemental activities are designed to provide exposure to and practice in math and science and remediation in these areas. Of primary concern is the conduct of these activities in a manner that insures female students a positive experience. Unlike the workshop component, participation in the math-science activities is voluntary; students, however, will be encouraged to take part in at least one of the modules which have been scheduled so that students may participate in all or any combination of them.

The math-science supplemental component consists of five modules and individual tutoring, each differing in length and technique. A brief description follows:

Humanizing Calculus

At the conclusion of workshop Session 4, participants will be introduced to module 1, which will be conducted in two Saturday meetings.

The intent of this module is for participants to understand the importance of calculus as a tool in careers. Specifically, students will:

- understand the content of a course in calculus; and
- acquire some basic skills in calculus.

A sample course outline includes the following: the notation of function; rates; the Delta notation; instantaneous rates (idea of limit); area under curves; sigma and notation; more ideas on limits; introduction to integral sine and definite integral; and careers and calculus.

Introduction to Statistics

This activity is scheduled for two after-school sessions (each approximately two hours in length) and will take place after the calculus module. Since an understanding of statistics is important for many occupations as well as in everyday life, participants will be provided a working understanding of:

- the concepts of central tendency, mean, median, mode; frequency distribution; range, standard deviation, and correlation;
- statistics in the social, behavioral, and health sciences; and
- statistics and consumerism.

Using articles that appear in professional journals, newspapers, and advertisements in the media, students will learn to calculate simple functions. The emphasis will be on interpreting findings and conclusions.

Science in Everyday Life

The intent of module 3 is for participants to acquire:

- an understanding of some basic scientific procedures;
- hands-on experience in a laboratory setting; and
- understanding of the different sciences.

Students will meet on two Saturdays in a laboratory at the community college. In addition to discussing occupational opportunities in the sciences, the group will:

- prepare face cream and soap; work with an oscilloscope; wire a simple electrical circuit; make wine; and conduct metal experiments.

Introduction to Computers

The introduction to computers, module 4, can be conducted on a single Saturday. Participants in this activity will:

- acquire an understanding of computers;
- learn some basic computer-related skills;
- become aware of the use of computers in various occupations; and
- understand how computers affect everday life.

Participants will learn about computer "hardware" and "software." The meaning and development of computer languages--words and symbols which the computer can interpret into electrical impulses and back again--will also be discussed, and its direct analogy to using any spoken language.

The ways of sending messages or instructions to the computer will be reviewed; and cards, computer tape, and discs will be displayed. A teletypewriter terminal will also be available, on line to a computer.

Participants will write a simple program to solve an arithmetic problem on the teletypewriter terminal. The leader will discuss the steps that the students used to create the program: analysis of the problem, sequencing the steps--sometimes called "flow charting"--translating the "flow chart" into computer language, testing ("debugging") the program, and arriving at the solution. She will also relate this to "math."

Computer programs used for things other than direct mathematical calculations will also be discussed--particularly those used for information retrieval. An example of how computers can "recall" stored information will be presented on the computer terminal by using a pre-existing information retrieval program.

This activity will end with a discussion of careers related to computer technology.

SAT Preparation

Three two-hour after school sessions in the early spring will be devoted to preparing for the SAT. In addition to examining sample questions from old examinations, students' self-expectations and colleges' entrance requirements will be discussed. Participation will be open to those students in the spring workshop cycle as well as fall workshop cycle graduates.

Peer Tutoring

Peer tutoring will begin with the start of the workshop series. Participants will have available to them college tutors in math/science, and may request help with specific course work and/or with general problems. Students will be able to make use of tutors individually or in small groups where the concern is similar. In addition, students

will be encouraged to work on special projects, under the supervision of a tutor, to improve their expertise in a math/science area.

At the conclusion of workshop Session 4, Math Avoidance, participants' needs for tutoring will be assessed and tutors and student groups formed.

Female students enrolled in college will be recruited as tutors; the work of the tutors will be directed by subject matter specialists. Tutoring sessions can be held at the high school or college campus, depending on student schedules. Contracts for accomplishing specific objectives will be drawn up for each student, and a timetable projected.

POSTSCRIPT

The preceeding materials were prepared by project staff with input from community college and high school personnel under a planning grant from the New York State Education Department. The product outcome of that grant was the compilation of a set of materials that would be the basis of programmatic activity in the field. The design, structure, and content of the materials described herein were to be implemented in the fall semester of the 1978-79 school year using the staff (and students) from the educational institutions that contributed to these plans. As such, they were written for a specific target population; they make use of existing facilities and resources; and, perhaps most importantly, they would be implemented by personnel whose skills, abilities, and commitment were known.

Shortly prior to the completion of the final draft of the session plans we learned that there would not be a field demonstration. The project staff decided, nevertheless, to not only meet our obligations to the funding agency--i.e., to provide them with the session outlines--but to make these materials available to a potentially larger audience. There is, however, an important proviso concerning their use: although some of the content and strategies have been pilot tested informally and as discrete pieces, as of this date the package of materials has not been used in a field situation.

With this in mind, it is our hope that the audience will make use of these materials, either in the form presented or modified as needed.

Some variations are practicable. The content of the 11 session workshop component can be divided into separate sections with a minimal amount of revision; thus, students can be offered mini-series devoted to self-awareness, career awareness, math avoidance, and/or decision-making and career pathing.

Similarly, although this program was designed as an after-school activity with sessions limited (in most instances) to two hours, it is possible to restructure it in terms of time--either collapsing sessions for a more intensive experience or expanding them for a longer period of time. The logistics of scheduling should reflect geographic concerns, and the availability and needs of the target group and professional personnel.

As authors we feel that there are several considerations basic to the materials' effectiveness, and that these should be appreciated by potential users. Namely to the extent practicable,

- regard the population--female students about to be graduated from high school--as a special needs group;
- recognize the target population's basic conservatism as regards their future work plans--they tend to regard work as limited and temporary, and they lack appreciation of possible areas of conflict in their work, education, and lifestyle decisions; and
- continually provide positive, attractive supports and reinforcements.

As a reflection of these concerns, the Career Paths program activities should, we believe:

- be implemented with an all female student group and a predominantly female staff;
- be conducted at a site other than the "home" high school;
- make extensive use of role models--each adult and peer staff should be selected on this basis and should reflect a diversity of styles and background; and
- deal directly with math and science, both attitudinally and in in terms of skills.

If individuals would like to make use of these materials we are available for consultation and discussion. Since we remain interested in the program's content and processes we would appreciate it if users would share with us their experiences with these materials. In addition to information from users about sequencing, realism, and other logistical problems we, of course, are interested in whether our materials contribute substantially to

CAREER PATH PLANNING BY WOMEN.

APPENDIX A

PROCEDURES

1. Guidelines 2/78. . . . . A1

2. Scope of Work 3/78 . . . . . A3

3. Newspaper Articles and Hand-Out. A11

4. Application: Career Paths for Women A14

GUIDELINES 2/78

CAREER PATHS FOR WOMEN STUDENTS

Rationale and Goals

IRDOE (the Institute for Research and Development in Occupational Education) of the Graduate School and University Center, CUNY, has received VEA funds from the New York State Education Department to plan a complete program to expand the horizons of young female students to career areas that are non-traditional for their sex. The overall goal of the project is to enable female students in their last year of high school to better appreciate their future options--career, personal, and their integration--and to facilitate career decision-making.

The one semester (January-July 1978) planning grant, to be undertaken in cooperation with a community college, senior college, and their feeder high schools, is to culminate in a program design to be presented to the State Education Department for implementation in September 1978. A key element in the proposal is the community college which occupies a unique position for articulating with secondary schools and four-year colleges.

Background and Objectives

In response to continued low enrollments of women in technical and scientific curricula, the Career Paths program seeks to overcome what have been identified as the two major barriers for women who have potential in these fields: the absence of strong role models and the maleffects of "math filtering." Since women are underrepresented in these occupations to begin with, students are less likely to come into contact with women in these vocations: hence the need to provide them with role models. Furthermore, it has been shown that as female students progress through junior and senior high school they take progressively fewer math courses than do males at each level: the cumulative effect is poor background in those courses needed to enter and compete in technological and scientific college programs. The Career Paths project must, therefore, also incorporate structured opportunities to surmount the math filter problem.

Young students, moreover, have limited exposure to the variety of career options, don't fully appreciate the relationship between work and personal goals, and generally have fairly conservative career plans. Thus, career information and peer support will be important aspects of the newly developed program.

The detailing of the program's content and activities is the function of the participants in the planning phase; the final program is, however, envisioned to consist of a basic series of workshops to provide female high school seniors with occupational/educational information and an opportunity to plan their own future, supplemented with individualized counseling and tutorial/remedial instruction in math. It is suggested that the workshops take place on the college campus, and that the activities emphasize the use of role models from local business and industry and peer group and administrative supports.

Organization and Structure

The specific concerns for the Spring 1978 semester center on developing materials, activities, procedures, and personnel. A two-year and a four-year college, and their feeder high schools, will be invited to participate in the planning and preparation phase and the 1978-79 program.

Three task forces will be formed, each composed of a representative from each of the educational levels; each task force will have available the part-time services of IRDOE personnel (the coordinator(s) and a graduate student) to help compile information and present it to the program's sponsor.

The task forces will meet independently to prepare strategies, materials and activities, and recommendations. The three groups, or representatives from

each, will meet together early in the planning for orientation and discussion; and again to prepare the final document by June 1978.

Task Force A - Career Planning. This task force will assume primary responsibility for the content of the occupational awareness workshops responsive to women's unique problems in vocational choice. Representatives with guidance and career counseling backgrounds will also examine questions related to scheduling (e.g., how many workshop sessions devoted to each activity); location (e.g., college campus, feeder school, work site); and number of participants (e.g., size of group); as well as content (e.g., information, decision-making, planning) and techniques (e.g., use of role models, instructional staff).

Task Force B - Tutorial and Remedial Alternatives. Representatives of the academic departments from the participating institutions will examine the tutorial-remedial instructional component including on- and off-campus sources of assistance; use of high school, two-year, four-year college, or shared facilities; and the use of college students as tutors. Their recommendations will speak to such issues as individual and/or group instruction; self-instruction; and the loci and sequencing (e.g., last semester of high school/summer session/first college semester) of instruction. Of primary concern are strategies to improve student interest and readiness in those prerequisities for success in technological and scientific occupations.

Task Force C - Administrative Procedures. To the extent possible this group will be comprised of representatives from high school and college administration and will focus on the cooperative arrangements basic to successful program implementation, such as coordinating counseling and follow-through supports. Task Force C will also examine advanced placement, use of work-study or CETA tutors, released time for faculty, after-school activities, and college course scheduling.

Timetable and Responsibility

By the end of March 1978 all participating schools will be selected, and task force members assigned. A joint task force meeting wll be held in March to discuss program goals and task force responsibilities. During April and May each individual task force will meet on an as-needed basis to prepare a set of strategy and content recommendations. In June, a final meeting of all task force members (or representatives from each) will meet together to compile a total plan, with a final report prepared in July. The Career Paths project will be ready for implementation in September 1978.

For further information, contact:

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SCOPE OF WORK 3/78

Task Force 1 - Career Path Workshops Component

The goal of the Career Path program is to provide female students in their last year of high school with structured experiences about careers, education, and lifestyles in order to facilitate their career planning. Career Pathing calls for the individual to realize that occupational decision-making requires knowledge of career alternatives, educational options, and lifestyle factors. Decisions are made by appreciating the number of options available at given moments of time; the number of different possibilities of combining careers, education, and lifestyle alternatives; and the implications (for both immediate and future plans) of the various combinations at points in our life's activity. The product outcome of the project calls for each student participant to produce an individualized career plan. This outcome should, therefore, serve as a guide in the design of each component.

The Career Path Workshop component is the principal means by which women students have the opportunity to expand their interests and their awareness of future options, particularly as regards their consideration of non-traditional careers.

Task Force 1 is responsible for producing a detailed plan for a Workshop series responsive to the unique problems women face in occupational choice. To achieve this, the Task Force must:

- identify the needs of the target population;
- design the content of the workshop;
- delineate the activities, strategies, and techniques to be used in the workshops;
- enumerate the types of personnel needed to implement the aspects of the workshop component;
- specify the types of non-personnel resources and facilities needed; and
- integrate the Workshop and tutorial-supplemental instructional (Task Force 2) components.

To assist in the Task Force activity, we have incorporated some suggestions concerning content and strategies. These ideas, reflective of the concepts proposed to the funding agency, should be viewed as illustrative, and are not necessarily to be accepted by the Task Force.

A. Identification of the Target Population, and Their Needs

The pilot demonstration (1978-79) will involve approximately 100 female high school juniors and seniors with potential to succeed in scientific/technical occupations in which women have been, heretofore, underrepresented. A review of the literature suggests that relatively few women have chosen these careers because of the absence of convincing role models and the lasting effects of math filtering.

During this planning phase the Task Force will consider:

- Criteria for the identification of likely student participants. Criteria might include, but not be limited to, test scores, high school grades, expressed interest, and/or recommendations by counselors and teachers.
- Scheduling of workshop sessions, taking into account students' after-school activities (social and work).
- Age of the participants and degree of sophistication (and interest) about career, lifestyle, and "women's" issues.

B. Content of the Workshop Component

Some of the major topics that might be covered in the Workshop series include:

- Self-Appraisal, career-related concerns. The objective is to increase participants' understanding of their abilities, interests, and values

as they relate to occupational choice. Students would engage in activities designed to help them understand where they are now; what are their strengths and weaknesses, interests, preferences, values, and needs; what occupational areas they know about; and what types of work do they imagine themselves doing--immediately after graduation, and in 10, 20, 30 years from now.

Techniques and strategies to consider include: testing, values clarification; individual and/or small-group discussion; films and other audiovisuals, and/or role models. Suggested personnel might include counselors, college student "peer models," "adult" role models, and/or leaderless groups.

- Self-Appraisal, lifestyle concerns. The emphasis is to help participants understand themselves in relations to other people, to society, and to work--and would address such issues as parental support and approval; marriage, family, and home; and friends, leisure, and personal development. All activities should be designed to lead participants to an appreciation of alternate lifestyles as these relate to career.

  The most promising strategy appears to be the use of strong role models. The Task Force might consider written materials (e.g., biographies) and activities, group discussion, and values clarification exercises as well.
- Career awareness. The objective is to increase participants' knowledge of career opportunities, employment outlooks, and labor market trends--with specific attention to women in the labor force.

  Participants should be exposed to more information about various occupations, and the on-the-job work duties and responsibilities. Focus might be given to understanding what a typical day at work is like and might call for visits to work places, audiovisual aids, and analyses of a day in the life of the role models.
- Education and training. Some part of the workshop series should be devoted to increasing participants' knowledge of the educational options available (two-year college training, four-year college training, graduate school/professional training); the advantages and disadvantages of alternating work and educational experiences; and the concept of career ladders.

  Participants might discuss such issues as college course requirements; advanced placement; financial aid and scholarships; common "core" subjects; prerequisities for technical and professional non-traditional careers; the amount of education (and kinds of courses) required for various fields; and the relationship between education and what people actually do on the job. They should "come away" with a better understanding of the relationship between schooling and work.

  Techniques that might be effective in meeting the objectives include analyses of the educational requirements of various careers; discussion/interaction with college "peer" and professional role models; analysis of college catalogs; and discussions with financial aid officers.
- Career Paths. Career pathing describes a planning or decision-making process by which an individual plots his/her future, in this instance taking into account career and lifestyle options. This is the culminating Workshop activity: by understanding available alternatives, and the consequences of various courses of action at choice points, each participant will develop a career plan and a set of strategies.

To facilitate career pathing, participants might engage in individual and small-group discussions and/or analysis of career paths of other women as preparatory to working out their own plans.

C. Questions To Be Addressed by Task Force 1

In general, Task Force 1 is responsible for:

1. Establishing criteria to select student participants.
2. The length of the Workshop--and the number of Workshop series. To accommodate 100 participants, at least two series might be considered: dependent on their length, should they be concurrent? Consecutive? Overlapping?
3. The number and grouping of participants in each Workshop series. Should students be grouped by grade level (e.g., one series for seniors, one for juniors)? By feeder high school (e.g., all Francis Lewis, John Bowne, Benjamin Cardozo)? By career interest? Ability level? Randomly?
4. A Workshop schedule to include:
   (a) the number of Workshop sessions in a series;
   (b) the number of sessions devoted to the major topics;
   (c) the length--duration--of each session (equal? varying?);
   (d) when the Workshop is held (it is suggested that all sessions, with the possible exception of any designed for visits to work sites, be held at Queensborough Community College).
5. The physical facilities and other non-personnel resources that may need to be developed, purchased, or rented; for example, films, books, tours.
6. The personnel needed to implement the workshops and coordinate the program. Some consideration might be given to:
   (a) the amount of released time anticipated for high school and community college personnel;
   (b) the use of role models from business and industry;
   (c) the use of women college student role models, and
   (d) the use of high school participants to work with other, non-participating high school women and/or with future participants.

   Role models should be an integral part of all phases of the Workshop component. Obviously, they should be women working in (or toward) non-traditional scientific and technological occupations. Task Force 1 should consider additional characteristics of these role models--different lifestyles and alternative career paths--as well as the use of biographies and other written materials. Role models should also represent different age ranges and ethnic groups.
7. It will be necessary to indicate the various techniques, strategies, and activities to be employed in each workshop session as well as the personnel to be used. The activities are, to some degree, dictated by the workshop content; flexibility, however, is possible and desirable--especially if a session runs for a long period of time.

   Role-playing, simulations, lectures or panel discussions, paper and pencil exercises, audiovisuals, and demonstrations and hands-on experiences are some options. In indicating activities it is important that they flow logically from one to another; closure or summaries are built in; they are diverse; they relate to objectives; and the Workshop staff is comfortable with them.

8. Individual guidance and counseling. Task Force 1 might consider whether or not additional guidance and counseling of (some or all) individual participants is warranted; if so, would this best be accomplished by counselors affiliated with the college or high schools or by IRDOE's counselors (i.e., counselors hired as part of the grant)?
9. Individualization of experiences. Task Force 1 may wish to discuss the degree to which workshop sessions or activities are to be individualized. It is suggested that most, if not all experiences, be shared experiences common to all participants; exceptions may occur in visits to work sites, and/or small-group discussions with specific adults as an information-gathering technique. However, individual counseling of participants, together with the highly individualized supplementary instructional component, may adequately serve any unique student needs. Each student's final career plan does, of course, reflect her own values, interest, and abilities, but the process of career pathing or decision-making is identical for all students.
10. Integration of Workshop and Supplementary Instructional Components. All Task Force representatives should consider the optimal design for integrating the Workshop series with the supplementary instruction in math/science. Of primary importance is the question of scheduling: an example may be most illustrative.

    Suppose the first Workshop series for high school seniors commences in October and is composed of 10 sessions, once a week. All participants attend these sessions. During this time, some participants may also be involved in "math anxiety" clinics, some in skills upgrading, and some in mini-math workshops. One question is whether the math sessions be interspersed with the workshop sessions, or whether they be conducted concurrently; if the latter option is designed, for example, some attention needs to be paid to the problems of using two afternoons a week, bringing students to the community college twice a week, and/or arranging for these activities at the high schools. In addition, Task Forces 1 and 2 need to address the question of continued (supplemental) activities for these participants during the Spring semester of the academic year; some may be ready to enroll in a high school or college math course--but others may need continued support activities. The second group of participants (juniors?) may start the Workshop series in the Spring, with the instructional component designed around reducing anxiety and preparing for the SAT's. Note that in this example, Task Force 2 will be responsible for two group of participants in the second half of the year.

Task Force 2 - Supplemental Instructional Component

This Task Force will be composed of representatives from the community college and from the three participating high schools. To the extent possible, members of this group should have a math/science background, experience in working with 11th and 12th grade high school women, and an understanding of the math- and/or science-related problems of the target population.

Task Force 2 is responsible for designing the "Career Paths" project Supplementary Math Component, and must address itself to designing activities that will meet the needs of all participants in the program. These students, all of whom will participate in the Workshop component, vary in math/science skills and receptivity, but have been selected as having the potential to succeed in technical

and scientific occupations. The first point, therefore, is that the Supplementary Instructional Component must incorporate activities for women with weak backgrounds in math as well as more advanced activities for those with strong backgrounds.

A second point to consider is that the supplemental activities need to have two foci: skills building and attitude improvement. Thus, the math-related activities should not only meet the varied skills needs of the participants, but should be designed to serve as positive reinforcement for those women who have had negative experiences (or exhibit negative attitudes) in mathematics.

The end product of the work of Task Force 2 would be a series of strategies addressing the needs of participants. Unlike Task Force 1, Task Force 2's plan need not present a unified approach for all participants--rather, it should be highly individualized. Moreover, Task Force 2's suggestions need not be implemented on the community college campus. (For each approach, however, the task force should indicate the target population, and the structure [format] and content.)

Following is a list of suggested options:

1. Enrollment of participants in existing math courses given by Queensborough Community College (QCC). QCC offers Math 10 and Math 20 for entering freshmen. These are non-credit (remedial-type) courses, and are considered prerequisites for other college courses. It should be noted that Math 10 and Math 20 are designed in modular form; it may, therefore, be possible to present participants with selected modules. (See also #3 below.)
2. Enrollment of participants in advanced and/or for-credit courses given by QCC. Students qualifying may participate in QCC's High School Honor Program and take one advanced course for college credit. Alternatively, participants who take an "overview" type "course" may then qualify for advanced placement.
3. Mini-workshops. Some students may benefit from mini-workshops devoted to:
   a. an overview of math--as an introduction to scientific and technical careers.
   b. an overview of specific mathematical subjects.
   c. specific mathematical skills, including remediation.
   d. reducing "math anxiety" through the development of a "learning-counseling" program. Such an orientation seeks to help students understand how stress impeded ability to solve math problems.
   e. preparation for SAT's and other college placement/entrance exams.
4. Enrollment of participants in "special" advanced high school math courses which they had not planned to take previously. For some students special sections or courses may be conducted at the high schools. As an illustration, it may be worth while to consider an "all-women's" intermediate algebra class. Such an approach would be identical to existing math courses in terms of content covered, but would attend to attitudinal needs as well.

For each of the above approaches, plus any additional ones developed by the Task Force, the following questions should be answered:

- How will participants be grouped (selected)? Some criteria that might be considered include: the course work completed; grades in completed courses; teacher recommendations; future career plans; and attitude toward mathematics. Can we estimate how many students will be involved in each different type of approach?
- What content will be covered? What are the objectives underlying each approach?

- What resources (texts, calculators, etc.) will be needed?
- What facilities (e.g., space) will be used? What are the advantages/disadvantages in conducting these activities at the various sites? Are there benefits accruing to use of college classrooms?
- What are the logistics for integrating each approach into the Career Path Workshop component? (Consider the number and duration of activities as well as their timing--should, for example, the math component activities start at the beginning of the Career Workshops or after?)
- What are the most appropriate strategies (in terms of personnel) for meeting the activity's objectives? Can personnel time be estimated and used as a basis for budgeting released time and/or tutoring costs?
- What motivators/reinforcements can be built into each option? Can we award "certificates of completion" which can be part of a student's transcript? Can we schedule these activities so that a student can take the SAT's again, with an opportunity to improve scores?

Task Force 2 should prepare plans detailing the best type of personnel to implement each approach. In addition, Task Force 2 might consider the kinds (and amount) of staff needed to coordinate/supervise the Supplemental Instructional Component and, how these people might work most cooperatively with the Career Paths Workshop Component. Suggested personnel include, but are not limited to:

1. Faculty from participating high schools and the community college;
2. Peer tutors--women high school students;
3. Use of women college students (from Queensborough Community College and Queens College) to provide individual and/or small group tutoring or instruction;
4. Use of guest speakers (role models from business and industry) to discuss/reinforce the fact that many, if not all, scientific and technological occupations require an understanding of mathematics;
5. Individual, self-instruction supervised by a member of the faculties.

The most important point for Task Force 2 to keep in mind is that the math activity plans evolved do not have to be a formal course of study. Rather the activities should help alleviate math anxiety and increase the participants' understanding that math is needed for many desirable occupations.

Task Force 3 - Administration

Task Force 3 differs from 1 and 2 with respect to composition, nature of responsibilities, and formality of structure. It will be composed of one representative each from Task Forces 1 and 2--and will call on the community college and high schools administration for input. There may or may not be meetings of Task Force 3.

Task Force 3 is responsible: for detailing and arranging the personnel and non-personnel resources and facilities for effective implementation of the program; and for helping insure that potential problems are anticipated. As Task Forces 1 and 2 proceed, Task Force 3 will be kept current with program needs.

Task Force 3 will address the following issues.

1. Program articulation and coordination. During the 1978-79 year, representatives from at least three high schools, one community college, one four-year college, and the Institute for Research and Development in Occupational Education will be actively involved in the Career Path Workshops Program. It may be necessary for Task Force 3 to consider how best to insure coordination among these groups and between them and others more peripherally related to the program.

- What types (i.e., who) and how many supervisory personnel will be needed to implement the program and how much of their time is anticipated?
- How will supervisory responsibility be divided? By educational level? By school? By component or content? What mechanisms are needed to insure coordination between program components? Should formal channels of communication be considered and, if so, how extensive should they be?
- What provisions should be made to inform and interest high school and college staff not directly involved in the program? Orientation meetings? How should staff from other feeder high school be involved?

2. Guidelines for program monitoring and evaluation. These activities will be carried out by IRDOE, but input from the participating institutions will insure more meaningful information. Task Force 3 might address such questions as:

- Who might be included in comparison groups?
- Using existing tests or other measures to assess progress in mathematics.
- Effects of the program on non-participating staff and student.

3. Follow-up supports for student participants. Task Force 3 might examine the question of what kinds of follow-up activities might be desirable for students who have participated in the program.

- For the 12th grade students, follow-up supports might include college-provided counseling; formation of a Special Interest Group at the high school; scheduling or arranging courses to include program participants as a group; and/or special college freshman orientation sessions for them.
- For the 11th grade participants, the high schools might consider follow-up career-related activities; special projects for participants; formation of a special group or club; and/or using participants as models for other groups of high school women.

4. Personnel and resource needs for Workshop Component. As Task Force 1 begins to define the program, consideration needs to be given to:

- Who--what type of people--are needed to conduct each workshop session? College counselors? Adult role models from business and industry? Peer models--college women?
- How will these school-based leaders be paid (released time--what procedures are required to release faculty)? What are the possibilities/sources for obtaining role models/leaders free from speakers bureaus and/or organizations' public relations divisions?
- What training of leaders is called for? Are the training needs elaborate or can they be assumed as a non-cost item?
- Where (college campus, high schools' campus, work sites) will the Workshop sessions take place? How much space is needed; how much space is available? What kind of rooms--individual classrooms? Large meeting rooms for introductory or whole-group sessions? What provisions (transportation, insurance, etc.) need to be made to bring participants to the community college? To work sites?
- What special audiovisuals are suggested, and are these available for use in the workshops? What other types of materials may have to be purchased, and what are additional sources of funding?
- Are there motivational or other incentives (and if so, what kinds) that need to be developed/addressed to assure participant interest? For example, can we give service credit to participants? Other credit or non-credit recognition?
- Are plans for scheduling workshops realistic? Has adequate consideration been given to during-school, after-school, and Saturday schedules?

5. Personnel and resource needs for Supplementary Instructional Component.

Again, as Task Force 2 delineates its requirements, attention should be paid to integration of the instructional and workshop components in terms of scheduling, personnel, space, and relationship between content.

- What kinds of (and how much) personnel are needed to implement the instructional alternatives? How much released time is required for community college faculty? Task Force 3 should consider the use of college women as tutors--can CETA funds be used; can these roles be filled by work-study programs?
- Where will the supplementary activities be conducted? Is sufficient space available?
- What special materials--e.g., texts--will be needed?
- What motivational or other incentives might be developed for participants? Advanced placement? Improvement of SAT's? High school credit? What are the problems in and procedures for awarding credit? Can certificates be awarded and added to participants/ transcripts? Other techniques?
- When--what is the most optimal scheduling of these activities? During the school day at the high schools; at the college? After school at the college; at the high school? Saturdays at the college? During free periods? Should these activities begin at the same time as the Workshop? After the start of the Workshop?
- If a participant successfully completes one of the activities (e.g., Math 10 or its equivalent), can she move into another activity?

6. Task Force 3 might also wish to consider additional activities, such as job placement, summer employment, or special project that particpants might engage in at the high school to further their career goals.

CAREER PATHS FOR WOMEN IS...

FOR FEMALE STUDENTS...

If you are a high school student who will enter the 11th grade in September and plan to go on to college, this new program may be for you!

CONCERNED ABOUT THEIR FUTURE

Have you ever asked yourself what you really like doing? What you will do after high school? What careers are available for women today? Whether you have to choose between family and career? How you decide on a major? Or, how can you arrange your life in a way best for you? If you answer "yes" to any of these questions, you may want to participate.

THE WORKSHOP SERIES...

Is an all-women's program. The workshops are being planned now. There will be about 10 to 12 sessions held after school on the campus of Queensborough Community College. Women college students and working women will discuss their careers and how they "put together" their job, education, and family life. Other women will work with you in exploring new career possibilities--especially some exciting areas that many women don't know about (or think they aren't qualified for) and they will help you learn about different ways to understand your career, education, and personal lifestyle options.

IN ADDITION...

You will have the chance to do some special project in math or science. Maybe for a credit; maybe to improve your SAT's...participate in an Honors Program or group discussion about being up-tight when it comes to chemistry, calculus, or college.

INTERESTED?

If you are interested, or want more information, see _____ in Room _____. Pick up an application and fill it out so that we can know exactly the topics you want to know more about.

CUNY/IRDOE
5/78

Institute for Research and Development in Occupational Education
Graduate School and University Center
City University of New York

APPLICATION - CAREER PATHS FOR WOMEN: We want to use the information on this application to plan a workshop program that meets your needs and interests. Your responses to the following questions will be used only for that purpose.

1. Name:_____ 2. School:_____

3. Looking back over all the courses you have taken and subjects you have studied:

List the two in which you have done the best:_____

_____

List the two in which you have been most interested:_____

_____

List the two that have given you the most problems or anxiety:_____

_____

List the two that you might like to take but probably won't:_____

_____

4. Including this year, what is your overall high school grade average?_____

your grade average in math?_____

your grade average in science?_____

5. List the high school science and math courses you have completed, including those you are taking now.

Science courses:_____ Math courses:_____

_____ _____

_____ _____

6. What math courses do you plan to take next year?_____

7. What science courses do you plan to take next year?_____

8. After you finish all schooling, what kinds of careers would you be interested in? List three choices in the order you would prefer.

First choice:_____

Second choice:_____

Third choice:_____

9. The CAREER PATHS PROGRAM FOR WOMEN we are planning will cover some of the topics listed below. Since we want these workshops to be meaningful, read the list and check all the topics you are interested in.

	Check if interested
How other women decide on a college major.	
What high school subjects should you take if you're interested in a specific career.	
What high school subject should you take if you're not certain about your future goals.	
How much and what kind of math and science do you need for various careers.	
Advantages of women entering careers where not many women are working.	
Is it necessary for you to choose between marriage and a career.	
Is it necessary for you to choose between children and a career.	
How do other female students feel about math and science.	
What does a career mean in terms of education, advancement, salary, and job openings.	
What can you do now to help get into college.	
How can you finance your own education.	

APPENDIX B

EVALUATION INSTRUMENTS

1. Student Questionnaire (Baseline Measure). . . . B1

2. Followup Questionnaire (Program Impact) B5

Institute for Research and Development in Occupational Education
Graduate School and University Center
City University of New York

CAREER PATHS WORKSHOP...

Student Questionnaire

This questionnaire asks you some questions about your past experiences and interests and about your future plans and goals. Please answer all questions as best you can.

The questionnaire is returned directly to us. No one at your high school will see your responses. Our staff assures you that your individual answers will be kept confidential and used only to plan and improve the program. If you want a copy of your completed questionnaire, check here: _____

1. Name:_____ 2. High School:_____

3. Home Address:_____ Zip Code:_____

4. Home Telephone:_____ 5. Official Class:_____

6. How did you hear about this program?_____

_____

7. What do you hope to gain from participating in this Workshop?_____

_____

_____

8. Do you know anyone who is working in a scientific or technological profession?

☐ No ☐ Yes. Describe who they are and the kind of work they do:

_____

How have these people influenced your interests?__

_____

9. Are you currently taking any math courses? ☐ No ☐ Yes. If yes, list the math course or courses:_____

10. Are you currently taking any science courses? ☐ No ☐ Yes.
If yes, list the science course or courses:_____

11. After you are graduated from high school, what do you think you will do? (Read all the choices below, and check one.)

- ☐ Go to work
- ☐ Go to work, and continue school later
- ☐ Go to a two-year college
- ☐ Go to a four-year college
- ☐ Go to work and school at the same time
- ☐ Go to a specialized training school (art school, commerical, technical, etc.)
- ☐ Other: describe:_____

_____

12. Check the highest level of education you would like to obtain: (Check one.)

- ☐ High school diploma
- ☐ Some college, no degree
- ☐ Two-year college degree
- ☐ Four-year college degree (Bachelor's)
- ☐ Master's degree
- ☐ Ph.D. degree (doctorate)
- ☐ M.D., D.D.S., LL.D., D.V.M.
- ☐ Other:_____

How likely is it that you will attain this level of education?

☐ Very Likely ☐ Somewhat Likely ☐ Not Very Likely ☐ Highly Unlikely

If you checked "Not Very Likely" or "Highly Unlikely, explain why:___

_____

13. After you finish all schooling, what kinds of occupations or careers would you be interested in? List the three choices in the order you would prefer.

First choice:_____
Second choice:_____
Third choice:_____

14. For each of the choices you listed in the question above, check to show what you think are your real chances to have that career.

First choice	Second choice	Third choice
☐ Very Likely	☐ Very Likely	☐ Very likely
☐ Somewhat Likely	☐ Somewhat Likely	☐ Somewhat Likely
☐ Not Very Likely	☐ Not Very Likely	☐ Not Very Likely
☐ Highly Unlikely	☐ Highly Unlikely	☐ Highly Unlikely

15. How supportive and encouraging do you think each of the people on the list below will be about your future educational and career goals?

	Very Supportive	Somewhat Supportive	Not Supportive	Neutral
Mother				
Father				
Brothers, if any				
Sisters, if any				
Boy friends				
Girl friends				
Teachers				
School counselors				

16. Describe any extracurricular school activities that you take part in (such as the newspaper, yearbook, clubs, sports, and so on):_____

_____

17. Are you now taking part in any special school programs such as honors programs, workshops, discussion groups, work-study, and so on?

___ No

___ Yes; describe the program, and mention the subject area:_____

_____

18. Do you now have a job for which you are paid?

___ No

___ Yes; please describe:_____

What are the hours and days you work:_____

19. Do you now have a job for which you are not paid? (a volunteer job)

___ No

___ Yes; please describe:_____

What are the hours and days you work:_____

20. Please list and describe any non-school hobbies you have, and clubs and other groups you belong to:_____

_____

_____

21. List any issues which you feel are important to discuss in this workshop, especially those topics that may be difficult to talk about in class, in school, or at home. Think about topics that may be important to you as a woman student, and about topics that you think other women like yourself need more information about.

_____ _____

_____ _____

_____ _____

The last two questions are optional. Your responses to these, as your responses to the other questions, will be confidential.

22. Indicate your ethnic group:

___Black ___Hispanic ___White ___Oriental

___Other; specify:_____

23. Check the highest level of education your parents attained:

Father		Mother
____	some high school, no diploma	____
____	high school diploma	____
____	some college, no degree	____
____	bachelor's degree	____
____	master's degree	____
____	Ph.D. (doctorate)	____
____	other, specify_____	____

Thank you. Please return this form in the enclosed, addressed, stamped envelope.

Institute for Research and Development in Occupational Education
Graduate School and University Center
City University of New York

CAREER PATHS FOR WOMEN WORKSHOP

Followup Questionnaire

Name:_____ Date:_____

This questionnaire asks you some questions about the Career Paths for Women Workshop program you just completed. Please read all the items carefully and answer all the questions as best you can. This questionnaire is returned directly to us and no one at your high school will see your responses. We assure you that your responses will be kept confidential and used only to help us evaluate our work and improve the program for the future. Thank you.

1. After you are graduated from high school, what do you think you will do? (Read all the choices below, and check one.)

- ☐ Go to work
- ☐ Go to work, and continue school later
- ☐ Go to a two-year college
- ☐ Go to a four-year college
- ☐ Go to work and school at the same time
- ☐ Go to a specialized training school (art school, commercial, technical, etc.)
- ☐ Other: describe:_____

_____

2. Check the highest level of education you would like to obtain: (Check one.)

- ☐ High school diploma
- ☐ Some college, no degree
- ☐ Two-year college degree
- ☐ Four-year college degree (Bachelor's)
- ☐ Master's degree
- ☐ Ph.D. degree (doctorate)
- ☐ M.D., D.D.S., LL.D., D.V.M.
- ☐ Other:_____

How likely is it that you will attain this level of education?

☐ Very Likely ☐ Somewhat Likely ☐ Not Very Likely ☐ Highly Unlikely

If you checked "Not Very Likely" or "Highly Unlikely," explain why:

_____

_____

3. After you finish all schooling, what occupations or careers would you be interested in? List the three choices in the order you would prefer.

First choice: _____
Second choice: _____
Third choice: _____

4. For each of the choices you listed in the question above, check to show what you think are your real chances to have that career.

First Choice	Second Choice	Third Choice
☐ Very Likely	☐ Very Likely	☐ Very Likely
☐ Somewhat Likely	☐ Somewhat Likely	☐ Somewhat Likely
☐ Not Very Likely	☐ Not Very Likely	☐ Not Very Likely
☐ Highly Unlikely	☐ Highly Unlikely	☐ Highly Unlikely

5. As a result of the Workshop did you change your mind about:

high school courses to take? ___No ___Yes; if yes, explain:___

_____

college to attend? ___No ___Yes; if yes, explain:_____

_____

part-time or summer work? ___No ___Yes; if yes, explain:_____

_____

6. Are you more or less sure of your future career plans as a result of the Workshop?

I am more sure___ I am less sure___ I am neither more nor less sure___

7. Since the end of the Workshop have you engaged in any activities related to career or educational planning?

___No ___Yes; if yes, please explain:_____

_____

8. In general, how would you evaluate the Workshop?

☐ Not Very Useful
☐ Somewhat Useful
☐ Very Useful

9. Looking back at the Workshop, what in your opinion was the most valuable and least valuable thing you got out of it?

most valuable: _____

_____

least valuable: _____

_____

10. Listed below are the math-science mini-courses. Please indicate how useful you feel they were.

	Did Not Attend	Not Very Useful	Somewhat Useful	Very Useful
Humanizing Calculus				
Introduction to Computers				
Science in Everyday Life				
Introduction to Statistics				

11. Did you receive individual tutoring as part of the Career Paths Program?

___No

___Yes; if yes: how many session did you have with your tutor?____

Was the tutoring: ☐ Not Very Useful
☐ Somewhat Useful
☐ Very Useful

12. If the Workshop were offered again, would you attend? ___No ___Yes

Would you recommend it to a friend? ___No ___Yes

13. We want you to judge for us whether you believe the Workshop to have directly influenced:

	YES	NO
Your major field of interest		
The electives you are, or will take		
What you do in your leisure time		
The way you feel about yourself		
The way you feel about careers		
The way you feel about women working		
Your career goal		
Your educational plans		
Your view of your own future		

Please explain any "YES" responses: _____

_____

_____

14. If you wish, use the rest of this page to describe any general reactions or make any suggestions for other Workshops for women like yourself.

Thank you. Please return this form in the enclosed, addressed, stamped envelope.

APPENDIX C

PROGRAM MATERIALS

1. Women in Selected Traditional & Non-Traditional Occupations [Abbreviated] (Session 1). C1

2. Feeling Good About Myself (Session 1). C2

3. Values Checklist (Session 2) C3

4. Self-Assessment Skills Checklist (Session 2) C4

5. Value/Skill Activity Form (Session 2). C5

6. Twelve Math Myths (Session 3). C6

7. A Typical Day (Session 3). C7

8. Math Games We Play (Session 3) C8

9. Career Characteristics Data Sheet (Session 6). C9

10. How to Gather Career Information (Session 6) C10

11. The Communications Cluster, and "Broadcast Technician" (Session 6). C14

12. College Selection Fact Sheet (Session 7) C16

13. Career Decisions for Women (Session 9) C17

14. Ellen's Day (Session 10) C18

15. Cindy: The Biography of a Sixteen Year Old Girl (Session 10). C19

16. Personal Goal Statement (Session 10) C21

17. Plan For Action (Session 11) C22

18. Next Steps (Session 11). C23

WOMEN IN SELECTED TRADITIONAL AND NON-TRADITIONAL CAREERS

OCCUPATION	% WOMEN
SCIENTIFIC AND TECHNICAL OCCUPATIONS	
Conservational Occupations	
Foresters	<5*
Forestry technicians	<5
Range managers	<5
Soil conservationists	<5
Engineers	
Aerospace	2
Agricultural	<3
Biomedical	<3
. . . . .	
Mining	2
Petroleum	1
Mathematics	
Mathematicians	25
Actuaries	30
Statisticians	40
Statistical clerk	65
Life and Physical Scientists/Technicians	
Agricultural	9
Atmospheric & Space	11
Biological Science	35
. . . . .	
Surveyors	5
Life science technicians	30
Physical science technicians	15
Engineering technicians	5
EDUCATION AND RELATED OCCUPATIONS	
Elementary School Teachers	84
Secondary School Teachers	49
College and University Teachers	38
(Sample of College Teachers)	
Biology	22
Chemistry	12
Physics	4
Mathematics	18
. . . . .	
English	41
Home Economics	92
School Administrators (college)	33
School Administrators (other)	37
OFFICE OCCUPATIONS	
Computer programmer	25
Systems analyst	10
Keypuncher	89
. . . . .	
Lawyer	5
Public relations worker	30
Purchasing agents	18
Urban planners	10
Proofreaders	73
Typists	94
SOCIAL SCIENTISTS	
Anthropologists	<25
Economists	20
Geographers	10
Historians	15
Political scientists	13
Psychologists	40
Sociologists	40
ART, DESIGN, AND COMMUNICATIONS	
Performing Artists	
Musicians	35
Dancers	83
Design Careers	
Architects	4
Drafters	8
. . . . .	
Interior designers	50

*< = less than

OCCUPATION	% WOMEN
ART, DESIGN, AND COMMUNICATIONS	
Communications careers	
Technical writers	20
Photographers	14
. . . . .	
Authors	21
Radio & TV Announcers	6
Editors and reporters	40
Interpreters	<20
HEALTH OCCUPATIONS	
Dental Careers	
Dentists	4
Dental assistant	88
Dental lab technicians	23
Medical Practitioners	
. . . . .	
Physicians (M.D.'s)	7
Podiatrists	6
Veterinarians	3
Other Health Careers	
Pharmacists	12
Dietitians	92
Registered nurses	98
Medical therapists	64
Clinical lab technicians	72
Radiologic technicians	70
Health record technologists	94
SALES OCCUPATIONS	
Insurance agents & brokers	12
Real estate brokers	32
. . . . .	
Sales - retail	65
Securities brokers	10
Advertising	20
SERVICE OCCUPATIONS	
Judges	8
FBI agents	<5
. . . . .	
Mail carriers	8
Funeral directors & embalmers	7
Bank officers	18
Bank tellers	86
Bartenders	21
Cooks (except household)	63
Piano & organ tuning and repair	4
TRANSPORTATION OCCUPATIONS	
Airplane pilots	1
Air traffic controllers	5
Flight engineers	2
Locomotive engineers	2
Transport administrators	12
INDUSTRIAL AND CONSTRUCTION OCCUPATIONS	
Boilermakers	3
Construction electricians	2
Roofers	2
Dressmakers & seamstresses	96
Glaziers	4
Carpenters	1
. . . . .	
Bookbinders	55
Photoengravers & Lithographers	17
Shoemaking machine operators	62

SOURCES: Occupational Outlook Handbook, 1976-77 edition, U.S. Department of Labor Statistics; and "Summary of Social and Economic Characteristics of Employed Persons by Detailed Occupation and Sex," U.S. Census Bureau, U.S. Census 1970.

FEELING GOOD ABOUT MYSELF

We all do things in our lives that make us feel good about ourselves. Sometimes it is a "public" success, like being chosen for a team, but often it is something more private and less obvious.

Below are four boxes. In each box briefly describe something you have done that made you feel good about yourself. Remember, what is important is that you felt good or felt that you accomplished something. For each thing you describe also indicate how old you were when it happened. Try not to list only things that have occurred recently, but think back over your whole life.

1.

how old were you?_____

2.

how old were you?_____

3.

how old were you?_____

4.

how old were you?_____

VALUES CHECKLIST

Different careers offer different opportunities to realize things that are important to our personal sense of self. It is, therefore, necessary and appropriate to include personal values as part of career decision-making.

Below is a list of values. Look over the list carefully and check each one that you feel is important to you.

____ INTELLECTUAL CHALLENGE: engaging in the pursuit of knowledge, truth, and understanding

____ KNOWLEDGE: continuing to keep up with new ideas and developments

____ CREATIVITY: being in situations where I can provide unusual or new solutions

____ PERSONAL GROWTH: making the most of my abilities; developing my potentials

____ LEADERSHIP: being able to guide and direct other people

____ DECISION MAKING: having the authority to decide policy, programs or courses of action

____ OBEDIENCE: following rules and obeying others in authority

____ CONTROL: being able to exercise a great deal of control over my own life

____ WEALTH: having more money than the average

____ COMPETITION: engaging in activities which pit my abilities against others

____ TEAMWORK: doing things as an important part of a group; working closely with others

____ FRIENDSHIP: developing good personal relationships with people

____ COMPANIONSHIP: having a close, intense relationship

____ INDEPENDENCE: relying mostly on my own abilities, talents and skills in what I do

____ SOLITUDE: having time to be my myself; doing what I like without having to be with other people

____ PUBLIC CONTACT: having a lot of day-to-day contact with people

____ SECURITY: having some assurance of stability in my future

____ FAME: becoming well-known and perhaps famous to the general public

____ AMBITION: desiring personal advancement or gain

____ RESPECT: being viewed as important and respected by the community and by my friends

____ SOCIAL WORTH: contributing to the betterment of the world in which I live

____ HELP OTHER PEOPLE: helping other people in a direct way

____ FLEXIBILITY: having flexibility in the number of hours or days I work

____ ROUTINE: being in situations where there is an emphasis on order and organization and where there are set plans with few unexpected changes

____ VARIETY: having the opportunity to do a lot of different things, or be in a lot of different places

____ EXCITEMENT: doing things that are exciting, challenging, and involve some risk

Go back and reread all the values you checked as important. Now try to identify the 7 values that are most important to you. List those 7 in the box below.

My Values

1. _____ 5. _____

2. _____ 6. _____

3. _____ 7. _____

4. _____

SELF-ASSESSMENT SKILLS CHECKLIST*

Below are a number of skills with a brief definition for each. Read the list carefully and for each item estimate your current ability. If you think you are very skillful circle the number 3. If you think you are somewhat skillful, but not very, circle 2. And if you think you are not skillful, circle 1.

	Not Skilful	Somewhat Skilful	Very Skilful
VERBAL-PERSUASIVE			
Writing: express myself well in written form	1	2	3
Talking: relate well to people in ordinary conversation	1	2	3
Speaking: able to deliver a speech to an audience	1	2	3
Persuading: able to convince others to believe something	1	2	3
Selling: able to convince others to buy something	1	2	3
Dramatics: able to present ideas or stories in dramatic form	1	2	3
Negotiating: able to bargain/discuss with view to reaching agreement	1	2	3
SOCIAL			
Social ease: relate easily with people who are looking for information, service, or help	1	2	3
Good appearance: dress presentably and appropriate for different situations	1	2	3
Deal with negative feedback: able to cope with criticism	1	2	3
NUMERICAL			
Computational: able to manipulate numbers rapidly without the aid of machines	1	2	3
Work with data: comfortable with large amounts of numerical data; gathering and interpreting data	1	2	3
Computer use: able to use electronic computers to solve numerical problems	1	2	3
INVESTIGATIVE			
Scientific curiosity: able to learn about scientific events	1	2	3
Research: gather information in a systematic way	1	2	3
MANUAL-PHYSICAL			
Mechanical reasoning: understand the way machines/tools operate	1	2	3
Manual dexterity: skill in using hands or body	1	2	3
Physical stamina: physical resistance to fatigue or hardship	1	2	3
Outdoor work: familiar with outdoors, able to work outdoors without encountering excessive obstacles	1	2	3
CREATIVE			
* Artistic: able to create or produce works of art	1	2	3
Imaginative with things: create new designs with objects	1	2	3
Imaginative with ideas: create new ideas or programs; able to view ideas in new ways	1	2	3
WORKING WITH OTHERS			
Supervising: able to manage or direct work of others	1	2	3
Teaching: help others learn how to do or understand something	1	2	3
MANAGERIAL			
Orderliness: arrange things in systematic-orderly fashion	1	2	3
Handle details: work with great variety of information or with small tasks that are part of a larger project	1	2	3
Make decisions: comfortable in making judgments about matters which require action	1	2	3

A. From the list of skills choose those that you feel are your most outstanding and write them in the box below.

MY STRONGEST SKILLS:

B. At home tonight reread the list of skills and in the box below indicate those you want to acquire in the future.

MY FUTURE SKILLS:

*Material adapted from: Howard E. Figler, PATH: A Career Workbook for Liberal Arts Students (Cranston, R.I.: Carroll Press, 1975).

Similar items appear on the "Skills Checklist for Occupations."

VALUE/SKILL ACTIVITY FORM

Everyone engages in a variety of activities in the course of a day. We have things we do at home, at school, with family, with friends, and alone. This form is divided into two parts: the left-hand column is for a list of skills and values, and the right-hand column is for a list of activities. Review the Skill and Value Checklists you just completed. In the left-hand column below indicate your four most important values, and the four skills you feel are your most outstanding. In the right-hand column indicate in what activities you have the opportunity to realize the values or use the skills. Write at least one activity for each value and skill you have listed. Try to be as specific as possible.

Value/Skill Listing	Activity Log: Where do you realize your values? Where do you use your skills?
Values a	
b	
c	
d	
Skills a	
b	
c	
d	

TWELVE MATH MYTHS*

Myth 1: Men are better in math than women.

Myth 2: Math is not creative.

Myth 3: Math requires logic, not intuition.

Myth 4: You must always know how you got the answer.

Myth 5: There is one best way to do a math problem.

Myth 6: It's always important to get the answer exactly right.

Myth 7: It's bad to count on your fingers.

Myth 8: Mathematicians do math quickly, in their heads.

Myth 9: Math requires a good memory.

Myth 10: Math is done by working intensely until the problem is solved.

Myth 11: Some people have a "math mind" and some don't.

Myth 12: There is a magic key to doing math.

*Source: S. Kogelman and J. Warren, Mind Over Math, Dial Press, 1978.

"A TYPICAL DAY"*

I really can't stand the cold. It must be around 30° right now. I wish it was summer and 85°.

I had some errands to run this morning before driving into Manhattan from Queens. We had run out of stamps so I went to the Post Office to buy two rolls of 15¢ stamps, one hundred to a roll, and one dispenser for 5¢. But the Post Office was closed for the holiday. I went to the copy center to get ten copies of a recent newspaper article. They were 7¢ for the first five copies and 6¢ for each additional copy.

I had to stop for gas and only needed 4.8 gallons, which cost $2.85. I realized that I had gotten pretty good mileage since I had gone 144 miles since my last fill-up.

Elaine and I met for lunch at "La Garbage." Elaine ordered a rare steak for $4.85 and coffee for 35¢. I had a chicken salad plate for $3.25 and coffee. The waiter put everything on one check, but we decided we would each pay for what we had ordered. We left about a 15% tip and went to a meeting.

---

*Source: S. Kogelman and J. Warren, Mind Over Math, Dial Press, 1978.

MATH GAMES WE PLAY*

1. MATH GAMES WE PLAY ON OURSELVES

Most of the time we have little conversations going on in our heads about how to feel (don't be nervous, stop worrying), and how to behave (be serious, stop being silly, control yourself). They compliment us (that was great, you did a good job, you deserve to celebrate) and criticize (don't be so clumsy, that was dumb, that was stupid). When faced with math, these little conversations become very critical and can cause us to give up. They are self-defeating games--games we play on ourselves! If we know what these games are, we will be able to catch ourselves playing them. This will help us to stop.

I AM PLAYING MATH GAMES ON MYSELF WHEN I THINK:

"Everybody knows what to do except me."

"I don't do math fast enough."

"I'm sure I learned it, but I can't remember what to do."

"I knew I couldn't do math."

"I don't have a math mind."

"I got the right answer but I did it the wrong way."

"This may be a stupid question but..."

"It's too simple."

"Math is unrelated to my life."

2. MATH GAMES OTHER PLAY ON US

There is a great deal of outside reinforcement for the math games we play on ourselves. Others play math games on us, both intentionally and unintentionally. It is as important to recognize these games as it is to recognize the games we play on ourselves.

OTHERS ARE PLAYING MATH GAMES ON ME WHEN THEY SAY:

"You did it the wrong way."

"You should know that."

"You will never be able to do math."

"It's obvious."

"That's an easy problem."

"All you have to do to learn math is to work hard."

---

*Source: S. Kogelman and J. Warren, Mind Over Math, Dial Press, 1978.

CAREER CHARACTERISTICS DATA SHEET

Career (Job) Title:

D.O.T. Number(s):

Education required for entry-level employment:

Tasks performed:

Work environment(s):

Relation with other workers:

Starting salary:

Salary range:

Work force
Total number:
Number of women:
Labor market trends:

Advancement:

Source for additional information:

Comments:

(Continued on Back)

How to Gather Career Information

There are, as you know, two major "ingredients" that go into career planning, or in any other decision-making activity for that matter. Earlier in the workshop you considered the more difficult of the two: understanding yourself. The other major ingredient that goes into planning for careers is knowing the options, the alternatives that exist in the external world. What careers? What specialty? What professional or technical level? What can I do with a major in biology? psychology? The material that follows is intended to provide some guidelines about where and what kinds of information you need to accumulate about careers. Remember, early in your education the emphasis should be on expanding the knowledge you have about alternativws. Later, the narrowing and deciding process takes over, based on what you understand about your needs.

Information about the options in the external world is crucially important for making decisions. There are at least four kinds of mistakes commonly made by people making a decision based on inadequate or incomplete information:

TYPE A, "NOT KNOWING ALTERNATIVES." Consider the example of a student who does not apply for a scholarship because she does not know it exists.

TYPE B, "NOT KNOWING THE POSSIBLE OUTCOMES." Consider the example of a student who applies to a college without knowing what the course requirements are for a particular major.

TYPE C, "MISUNDERSTANDING THE IMPORTANCE OF THE SOURCE OF INFORMATION." Consider the student who reads occupational information that is obsolete.

TYPE D, "COLLECTING USELESS OR IRRELEVANT INFORMATION." Consider a researcher who conducts a survey to collect information already available in a census report.

Try to think of other examples, especially those from your own experiences, that fit these types of common mistakes.

The purpose of collecting information on various career opportunities is not only to become more familiar with that career(s) you are interested

in now, but to discover new opportunities--to expand and enlarge the number of possibilities, to broaden available options. Your objective should be to collect as much information as possible or practical. Some sources of career information include:

Personal Contacts. There are college advisors, career counselors, and/or financial aid officers at your high school whose job it is to provide you with information about course work, scholarships and other financial aids, schools, career information; and to help you understand your abilities, values, and skills.

In addition to seeking advice from these people, try to develop and maintain personal contacts with people working in career areas in which you are interested, including teachers in the departments. Ask about doing an independent project with one of your teachers--either for course credit or for the experience of learning more about a career. Also ask if you can work on one of her (his) projects as a volunteer; this will provide hands-on experience which may be the most important type of training you can get at this stage.

People currently working in the field are exceptionally valuable resources, for they are familiar with day-to-day operations and can fill you in on all those little details of the world of work that become truly important in your satisfaction with your job. These contacts can, in addition, provide you with current labor market information, new directions emerging in their field, leads to other people, and--of course--could be very valuable sources for future jobs.

Most people, especially women today, are very approachable and will take the time to meet with you if you initiate the request and make your needs clear and direct.

Printed Materials. The U.S. Department of Labor publishes the Occupational Outlook Handbook and the Dictionary of Occupational Titles (D.O.T.). These two publications are considered by many people to be the most important written sources of career information. The high praise lavished on these publications is due to their comprehensiveness and orderliness. Ask the librarian or the college's career counselor to show you these books and explain their use. Keep in mind that, for career exploration purposes, these are starting-points.

In your other packet of take-home materials we have compiled descriptions of many careers, based largely on information from the Department of Labor publications. You might review these materials to see the kind of information that is available in the D.O.T. and Occupational Outlook Handbook.

There is a plethora of written materials that your librarian can make available. A word of caution, however; much of the available materials--pamphlets, flyers, and other publications--are written by people who are trying to "sell" a career or an industry. Use these materials, but keep in mind that the authors tend to be convinced (and tend to try to convince you) of the virtues of their career or of their company. This is another reason for having made personal contacts--you need to know about the warts as well as the beauties of a career.

Observation. Visit places where people are doing the kind of work in which you are interested. Most companies will be happy to arrange visits to some of their facilities. You may not get to talk with the employees, but through observing the work setting you may get a "feel" for the on-the-job life-style.

At some places you might be able to arrange a part-time or summer job, or to volunteer a few hours or more of your time each week. It might be worthwhile to take anything you can get if it puts you close to people who are doing the kind of work you hope to do in the future. Working in any capacity at an actual work site is an excellent way to get an "inside" look at a career. (It also provides another opportunity for making personal contacts!)

Professional Organizations. Nearly all the professions have national organizations and most also have regional or local ones. The national headquarters are valuable sources of written materials--usually available free for single copies, or at a nominal charge. You can write to them for general descriptive information about the field, and also feel free to write with specific questions.

Many of these organizations are actively involved in increasing the number of women in the field, and many have special women's groups.

Professional organizations generally meet annually. The regional chapters also hold professional meetings. Some offer student memberships,

but almost all will permit non-members to attend (there might be some charge). Go to these meetings; slip into one of these conventions. It's not hard to do. People gather at conventions to share new information, old stories, and personal opinions. (Many conventions offer job placement services.) Talk to the professionals; get an idea of what they do, and where the future is in the professions.

"OKAY, SO NOW I KNOW WHERE TO GO AND WHAT TO DO TO GATHER INFORMATION, BUT WHAT KIND OF INFORMATION AM I LOOKING FOR?"

Good question!

Some of the information you will want to know about careers should be dictated by your personal concerns and values. This might include: the educational level required; the entry-level salary expectations; and the types of skills required. It might include collecting information about part-time work possibilities, or about re-entry after absences for personal reasons.

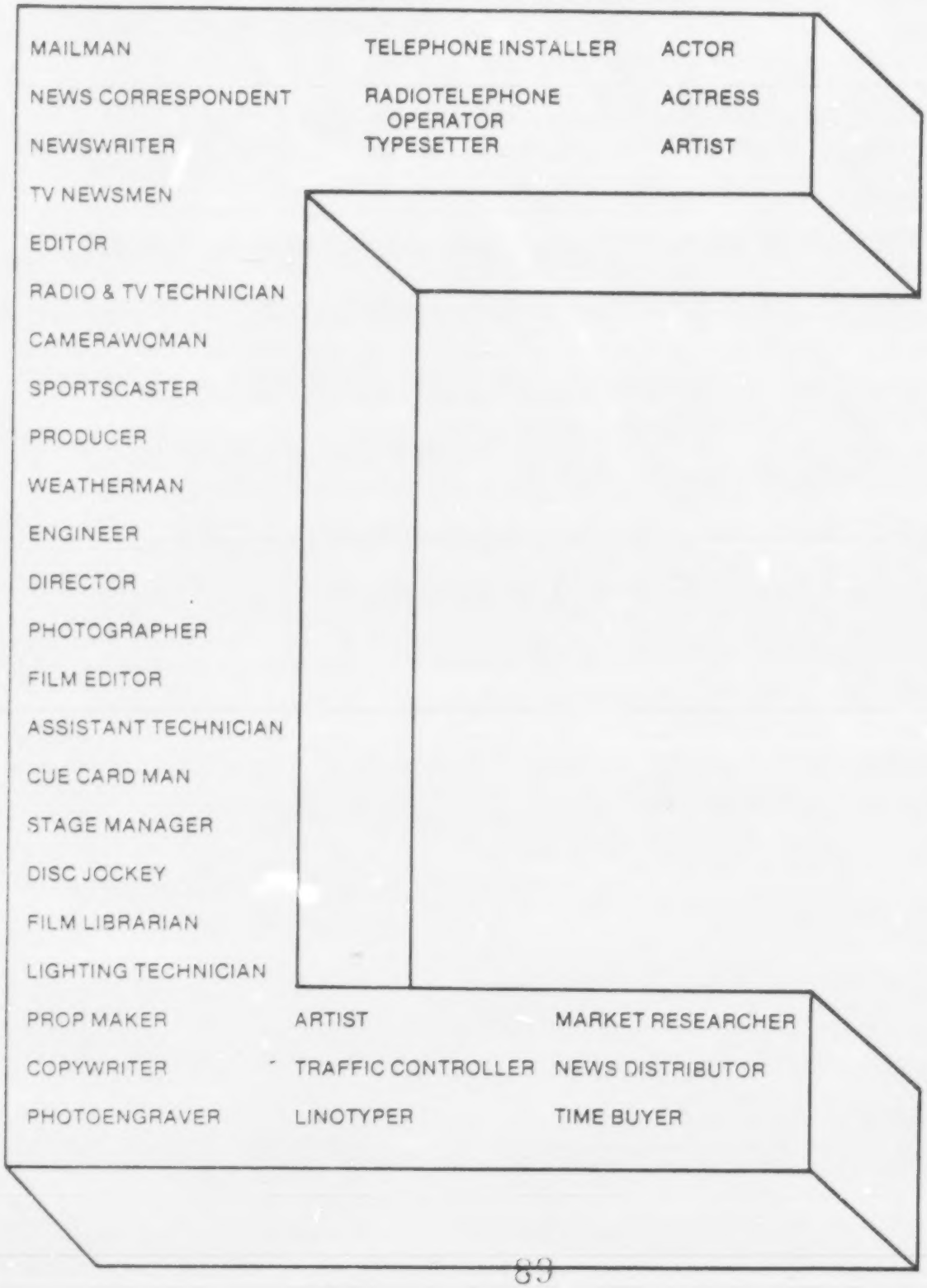
You will certainly want information about the functions performed by the worker, the basic job descrptions of day-to-day activity. You will want to know about the environment you might work in. Is it an office, an industrial laboratory, a college or university setting? What are the benefits of each? The disadvantages? Is it a large setting or a small setting, and what are the implications for promotion, advancement, experience?

You will want to collect information about relations with other workers. Will you work independently? As part of a large team? A multi-disciplinary team? Will you be part of a highly structured organization, or is the organization loose or flexible? Will you be low woman on the totem pole; with only bosses? Will you be able to supervise others? How much individual decision-making will you exercise, with how much responsibility?

You will want to know about labor market trends. Will there be job openings when you are ready? Are they concentrated in some parts of the country? Are they in cities, small towns, certain states? You will want to know about salary ranges and about the number of people in the profession, expecially the percentage of women.

You will also want to know about graduate schools and financial aids, including government scholarships and loans, and university scholarships.

THE COMMUNICATIONS CLUSTER



CAREER CHARACTERISTICS DATA SHEET

Career (Job) Title: Broadcast technician

D.O.T. Number(s): 962.281-014,018
194.262-014

Education required for entry-level employment: Must pass series of written exams to get a license. Test covers construction and operation of transmission and receiving equipment. Technical school/college is an asset.

Tasks performed: Operate and maintain equipment used to record and transmit radio and television programs. Depending on specialty, they work with sound equipment and effects, lighting, cameras and videotape recorders. They regulate the quality of sounds and pictures being recorded or broadcast, and control switching between cameras.

Work environment(s): Radio and TV stations; some travel to other broadcasting sites, including outdoors

Relation with other workers: Works as member of team of technicians in larger studios, under direction of supervisory technician or chief engineer, to produce the effects desired by the director.

Starting salary: $155-$215/week in 1976

Salary range: $200-$450/week, depending on size of studio and location

Work force
Total number: 22,500 in radio & TV
Number of women: 4% female in 1970
Labor market trends: Competition high for beginning jobs, especially in large cities. Small cities, new stations and cable TV have more promise.

Advancement: College degree in Engineering is important for advancement to supervisory technician or chief engineer.

Source for additional information:
National Association of Broadcasters
1771 N Street, N.W.
Washington, DC 20036

Where to obtain more information:
Corporation for Public Broadcasting
1111 16th Street, N.W.
Washington, DC 20036

Comments: High school courses in algebra, trigonometry, physics, electronics and other sciences are a good background. Many schools give courses to prepare people for the licensing test. There are 1st class and 3rd class Radio Telephone Operator Licenses. First-class is required by law to operate a transmitter and also to be a Chief Engineer. To get information about licensing exam, write:

Federal Communications Commission
Washington, DC 20554

COLLEGE SELECTION FACT SHEET

What I need to know!

General Information

How many students are enrolled at the school?

- How many are full-time students, how many part-time?
- How large is the freshman class?

What does the campus look like?
Is the college private, public, affiliated with a religious organization?
How much is tuition?
Besides tuition, how much will it cost

- if I live at home?
- if I live on campus?
- if I live off campus alone or with friends?

What housing and eating facilities are available?
What extracurricular activities and facilities are available?

- athletic
- sororities/fraternities
- social events on campus
- clubs in my areas of interest

Do most students commute, or live on campus?
What are the students like? (age, geographic distribution, academic preparation)

Admission Information

What are the admission requirements?

- What tests are required (SAT, ACT, Achievement)?
- Is there an early admissions program?
- Can I enter in February?
- Is there credit for advanced placement?
- Are there any high school courses required?
- Can I be admitted on probation?

Is an interview required for admission?

General Academic Information

What majors are available?
What courses are required of all students?
What accreditation does the school have?
How many teachers are there?

- Where did they get their degrees?
- How many teachers per student?

What is the average class size

- in introductory courses?
- in major subject courses?

What is the average SAT score of last year's entering freshmen?
What percentage of freshmen stay on and graduate?
What opportunities exist for financial aid?

- How many students receive financial aid?
- On the average how much aid do students receive?

Student Services

What kind of medical services are available?
What services are provided by the Placement Office?

- part-time work while attending school?
- summer jobs?

Is there a work-study or cooperative education program?

Information in Your Major Area of Interest

What specializations are offered?
How many students are currently studying in your area of intereat?
How many women are currently study in your area of interest?
How have graduates in your area done in the past?
What is a typical course of study in your area of interest?

- How many required courses?
- How many electives?

Do they offer work-study, internships, or cooperative education programs?

CAREER DECISIONS FOR WOMEN

This exercise is designed for your own use and will not be collected. Feel free to use it for notes, to remind yourself of questions to ask or things to discuss. You may choose not to use it at all, since it is intended to help you organize your thinking about your own education and career plans, and the kinds of decisions and situations you might encounter on the way toward achieving your goals.

CONSIDER...	Speaker 1	Speaker 2	Speaker 3	Speaker 4	Speaker 5	Speaker 6
• How did she begin to recognize her interest in her career?						
• When in her life did she begin to consider a career?						
• What were the factors that influenced her choice?						
• Did she change her career goals as she progressed? From what to what?						
• Were there interruptions in the pursuit of her goals?						
• What were the subject areas or things she was good at?						
• For how many years did she go to school?						
• How has she been able to cope with being a woman and having a career?						
• What people or factors provided her support and encouragement?						
• Who or what were the disruptive or negative influences?						
• What do you find <u>most</u> attractive about her career and life?						
• What do you find <u>least</u> attractive about her career and life?						

ELLEN'S DAY

Ellen looks in the mirror critically, then at the magazine pictures spread out on top of her desk. She still can't decide what to do about her hair, and her appointment for a haircut is tomorrow. If only she'd been born with curly hair! If only her hair were blonde like Joanne's, instead of this horrible mousy brown color! If only....

"Breakfast is ready," her mother's call interrupts her reverie. Ellen takes a last look at the pictures, shrugs her shoulders in disgust, and goes to the closet to get her clothes. She gets into her jeans automatically, but stops for a minute to decide between the print and her favorite plaid blouse. It's sort of chilly, so the light blue turtleneck would be the thing to wear today.

Ellen gulps down her juice and cereal, puts her dishes in the sink, and grabs her jacket, pocketbook, and school books. She races out of the house with a quick "good-bye" to meet her friend Barbara at the corner for the walk to school. Barbara is the one who has been encouraging her to get her hair cut and get a curly permanent, but Ellen isn't sure it's right for her. She just can't decide--but her appointment is tomorrow! All Ellen is sure of is that she's tired of that long, straight look.

But Barbara has something else on her mind this morning. The SAT's are coming up in May, and Barbara's parents want her to take one of those SAT prep courses. That would mean giving up eight Saturdays, and Barbara isn't sure it's worth it. Ellen would like to take the course, but her parents said she'd have to pay for it out of her own money. She has some money saved up from baby sitting, but she hates to spend so much on a course. She's been planning on getting a new blazer, and she'd like to get her boyfriend Jimmy something really nice for his birthday--there just isn't enough money to do everything she'd like.

Ellen's first class is Social Studies. They've been studying immigration, and the class is breaking up into committees to study the emigration patterns from various countries. She doesn't know whether to choose the committee on Ireland, where her father's family comes from, or Italy, which is the home country for her mother's family. She finally decides on Haiti and remains neutral between her parents!

The morning goes by quickly, and it's fifth period and time for lunch. Ellen doesn't much care for either the hot or cold lunch choices--somehow neither chicken croquettes with peas nor the egg salad sandwich sounds great, but she decides the sandwich is the lesser evil. Ellen sits with four of her friends, and they talk about what to wear to the party at Ginny's house Friday night. Ellen has a nice tweed skirt she got for her birthday that she'd like to wear, but most of the girls think that they'd rather wear pants. Ellen says she'll wear her dress.

Math comes after lunch, and Ellen really wants to cut the class. They're having a test today, and she's not prepared. She had planned to study last night, and then Jimmy came over to watch television with her, so she never did study. But if she doesn't take the test she doesn't know whether the teacher would give her a make-up--would he go for a story of bad cramps, so she's too sick to take the test?

She decides to go to math and get the test over with. Only one more class--English--and it's time to go home.

Barbara and Ginny come over to Ellen's house after school and they watch their favorite soap opera. Then they look at Ellen's hair-style pictures and try to help her decide what she should do about her hair. Barbara thinks she should try the curly style, Ginny favors keeping her hair straight, but cut shorter. Ellen still isn't sure what she wants to do.

Ellen's mother has a part-time job at the local library and doesn't get home until after six, so Ellen is supposed to get dinner started. She puts the meatloaf her mother prepared in the oven. Should she put potatoes in with it to bake, or open a can of corn? Her mother said to fix a salad, so Ellen washes salad greens and tomatoes. She doesn't know whether to put on blue cheese or Italian dressing, and figures she'll wait and let her father decide--he's the salad lover in the family.

Jimmy calls and asks whether she'd like to go bowling tonight. Of course she'd like to, but she has to spend some time on the immigration project for Social Studies. If they eat dinner on time there should be a half hour before Jimmy calls for her.

When Ellen gets home from bowling and gets ready for bed, she realizes that she still hasn't decided about her hair cut.

Cindy: The Biography of a Sixteen Year Old Girl

Cindy is a junior at Bayside High School.

She is the oldest of 5 children. Her brothers Chris and Fred are 9 and 14, sister Sue is 13 and her other sister, Linda, is 11. Her father is an accountant, and her mother is kept quite busy taking care of their large household.

The sophomore year of high school was a very eventful year in Cindy's life. The good part was meeting Bill, her boyfriend, who's a senior. They started going out after they met at a New Year's Party, and Cindy feels their relationship is pretty special. They're already talking about Bill's senior prom, and Cindy is happy that Bill expects to go to college nearby. He wants to go to Queensborough to study business management, and then he will work in his father's insurance firm.

The bad part of last year was that her sister Sue got very sick. She was in the hospital 3 times for a serious kidney condition, and once Sue had to stay in the hospital for almost a month. She's better now, but not completely well, and she may have to go back to the hospital for further treatment. Sue's illness created a close bond between Cindy and her mother, because her mother relied on her not only for the care of the younger children and the house when she had to be at the hospital with Sue, but also as somebody with whom she could discuss her worries--particularly during tax time, when her father so often had to work late.

Cindy has been taking dancing lessons ever since she was 6 years old, and she really loves to dance. She's taken modern, jazz, acrobatic, even tap dancing, but her favorite is ballet. She's good enough at it to have a part-time job helping with the youngest ballet class 2 afternoons a week, and she uses the money to pay for her own dancing lessons. Although Cindy would love to become a professional dancer she knows she's probably not good enough to make it in this very competitive field, particularly since she doesn't have the true ballerina's physical build--she's big-boned and has a hard time keeping her weight down as low as is fashionable for professional ballet dancers. Still, she sometimes thinks about studying dance at college so that she can teach it.

But as a result of Sue's illness and her exposure to hospitals and modern medical care, Cindy began to think about studying for one of the medical professions. She met a lot of different medical people when she visited Sue at the hospital--not just doctors and nurses, but a physical therapist, a dialysis technician, a medical social worker, a laboratory technician who explained a lot about blood samples to her and Sue--all sorts of people doing important jobs, and most of these jobs Cindy had not known anything about before Sue got sick. Cindy was taking biology last year, and when her teacher heard about Sue's illness she gave Cindy some interesting books about kidney diseases and medical treatments to read. She encouraged Cindy to take chemistry this year, and to think about taking either physics or advanced placement biology in her senior year.

Cindy is usually a good student, but with all the pressures last year she sometimes had trouble concentrating and her marks suffered. She barely passed Spanish, got a 75 in English, 80 in social studies, 70 in geometry and 90 in biology. This year she's taking English, social studies, chemistry, and steno and typing. She figured that would be easier than going on with Spanish and math. She talked about it with her biology teacher from last year, and she advised Cindy to definitely take intermediate math and trig next year if she's at all serious about going into any medically related field.

At the moment Cindy is confused about a lot of things. Some of them involve decisions she has to make pretty soon, and some of them may make a pretty important difference in her future. Here are some of the things she's thinking about:

She likes Bill a lot--but she thinks that maybe her mother is right when she tells her to give herself time, not to get too serious too soon. Bill talks about getting engaged when she graduates from high school and getting married the year after, when he'll probably be through Queensborough and ready for a job with his father. Some days that sounds wonderful to Cindy, and other days she's scared of being tied down so soon.

Cindy loves her dancing, but she wonders whether teaching dancing would really be a satisfying career, when she'll always be competing with people who worked as professional dancers.

The idea of working in some part of medicine, and helping people like Sue, really appeals to Cindy--but she's not sure she wants to stop taking steno and typing next year, and take the math and science she'd need for a medical job.

She doesn't know whether she should plan on going to Queensborough to be with Bill, or whether she should find out about other colleges. Sometimes she thinks it would be exciting to go away to college, but she wonders whether she'd like being away from her family, her friends, and of course, from Bill.

She's thinking about being a "Candy Striper" at the hospital so she'd find out more about what it's really like to work in medicine, but she's not sure she can find time for it with her school work and dancing and spending time with Bill. She thinks maybe she'll do volunteer work at the hospital next summer--but she'd also like a job as an assistance dance counselor at camp.

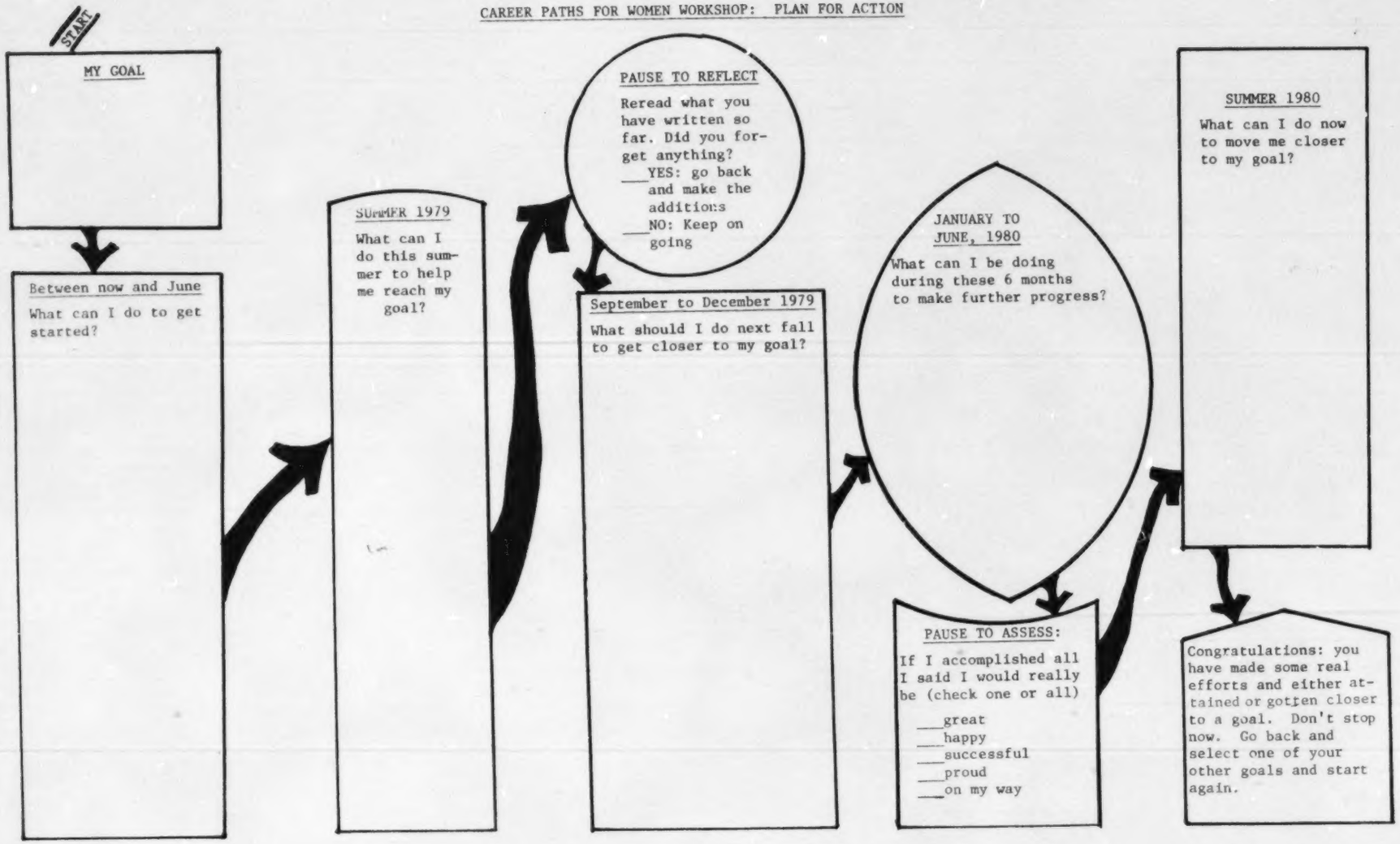
Cindy certainly has a lot to think about, and many important decisions to make. What do you think she will do? What do you think will happen to Cindy?

PERSONAL GOAL STATEMENT

Name: _____ Date: _____

AGE ↓	EDUCATIONAL GOALS	AGE ↓	CAREER GOALS	AGE ↓	PERSONAL GOALS
	List all the educational goals you want to realize. (Include both formal schooling and technical training.) Example: I will complete two additional math courses, I will get a bachelor's degree		List all the career goals you want to realize. (Include any specific jobs you want, characteristics of the work environment, and job characteristics.) Example: I want to work as part of a team, I want to work in a research laboratory		List all your personal goals. (Include concerns involving marriage, children, wealth, community activity and interpersonal relationships.) Example: I want to live on my own for a few years, I want to have a child by age 25

CAREER PATHS FOR WOMEN WORKSHOP: PLAN FOR ACTION


START
MY GOAL
Between now and June
What can I do to get started?
SUMMER 1979
What can I do this summer to help me reach my goal?
PAUSE TO REFLECT
Reread what you have written so far. Did you forget anything?
___YES: go back and make the additions
___NO: Keep on going
September to December 1979
What should I do next fall to get closer to my goal?
JANUARY TO JUNE, 1980
What can I be doing during these 6 months to make further progress?
PAUSE TO ASSESS:
If I accomplished all I said I would really be (check one or all)
___great
___happy
___successful
___proud
___on my way
SUMMER 1980
What can I do now to move me closer to my goal?
Congratulations: you have made some real efforts and either attained or gotten closer to a goal. Don't stop now. Go back and select one of your other goals and start again.

-C22-

NEXT STEPS...

In the Workshop, you got some information to help you in career planning. You may also have NOT gotten some information you may need. In either case, there are some next steps that you can take to help you clarify your plans.

To get you started, we've listed some THINGS TO READ, some THINGS TO DO, and some PEOPLE TO TALK TO. Read through the list quickly, checking the things you feel you need to do.

THINGS TO READ:

____ College and trade school catalogs
____ Literature about specific careers
____ Biographies of working women
____ Employment trends, salary, and other statistical information about careers
____ Descriptions of professional women's lifestyles
____ Pamphlets, materials published by professional associations
____ Classified ads in the newspapers, and in professional journals

THINGS TO DO:

____ Review the number and kind of science and math courses you've taken
____ Plan your school program for next semester
____ Enroll in a course
____ Join a professional association, or attend a meeting or convention
____ Join a career-oriented club
____ Try to get part-time or summer experience in your field of interest
____ Try to get volunteer work in your field of interest

PEOPLE TO TALK TO:

____ Your college advisor
____ College financial aid officers
____ Professionals working in your field(s) of interest
____ Your parents or other relatives
____ College students in your field(s) in interest
____ College and university admissions officers
____ Classmates
____ Teachers

IMMEDIATE NEXT STEPS

Review the above list and decide what you need to do IMMEDIATELY, and list them below with the date you will do them.

I NEED TO:	I WILL DO IT ON: